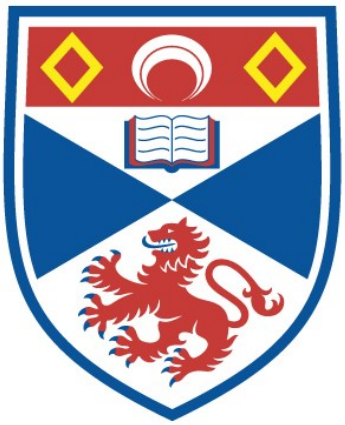
SOCIAL AND ENVIRONMENTAL INFLUENCES OF SMOKING BEHAVIOUR AMONG FEMALE NURSES AND TEACHERS IN SCOTLAND : THE ROLE OF SOCIAL CAPITAL

Jacqueline Joan Dutchak

A Thesis Submitted for the Degree of PhD
at the
University of St Andrews



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Abstract

Cigarette smoking is one of the most important causes of morbidity and premature mortality in developed countries. Since almost one-third of women in Scotland smoke, the health implications are paramount. Smoking rates among female professionals have decreased in recent years in the UK but they have not fallen equally for all occupations within this group. Historically, female nurses have had higher rates of smoking than other women in the general population while female teachers have had much lower rates. Recent work has revealed that smoking prevalence among nurses has declined in the UK and has reached levels similar to or lower than that of other women.

The aims of this thesis are to gain a recent estimate of smoking prevalence among female nurses and teachers in Scotland, to find out why some of these women smoke, why others never started, and why others stopped. This endeavour considers their work and home environments, their interactions with colleagues within and outside the workplace, and their levels of trust, networks, and co-operation in the workplace and neighbourhood. In addition to their current circumstances, this thesis also examines retrospective social capital and deprivation.

This study revealed that 31% of nurses and 7% of teachers were smokers, with prevalence of the former much higher than that of other women in the same social class and the latter prevalence much lower. The significant predictors, following multivariate analysis, of smoking and its cessation are varied and include individual, social, economic, and environmental factors. Of particular interest to this study is

that each of the constructs of social capital have significant and independent effects on smoking and its cessation but that the relationship is neither entirely positive nor completely linear. Furthermore, smoking is often used by women in order to create space and time for oneself in order to break from reality. It is also used to by many women as a means of exerting control over their life. Policies to prevent smoking or aid in its cessation must therefore recognise the important roles of social, economic, environmental and biological influences and how these vary during the lifecourse.

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CHAPTER ONE - INTRODUCTION

1.1 Background

Cigarette smoking is widely acknowledged as one of the most important causes of morbidity and premature mortality in developed countries. Although smoking is detrimental to the health of both men and women, there are differences in their behaviour and outcomes as they relate to tobacco use. For instance, among smokers who get lung cancer, women are twice as likely as men to develop the most deadly form of the disease (Royal College of Physicians Research Unit, 1998). Since almost one-third of women (nearly half in the lowest income quartile) in Scotland smoke, the health implications are paramount. Smoking rates among female professionals have decreased in recent years in the UK but they have not fallen equally for all occupations within this group. These, and other, reasons have prompted this examination of smoking among female nurses and teachers in Scotland.

It has long been known that there is a link between health and social status. Previous studies have found that mortality, morbidity, and self-rated health are strongly and positively related with income, education, and occupational status (Black *et al.* 1982; Marmot, 1986; Davey Smith *et al.* 1998a; 1998b). These social gradients in health status cannot be adequately or largely explained by individual behaviour or characteristics, relative access to effective health care, or exposure to the physical environment (Hayes, 1999) and there has been some debate about the relative importance of individual and contextual effects.

> "While individual or micro-level information explains a larger part of health variation, there is some statistical evidence for contextual effects in health variation of the British population, which can be expressed in terms of information on geographic setting. These contextual effects may operate at more than one geographic scale" (Curtis and Jones, 1998: p. 661).

In addition to absolute poverty or deprivation, relative disparity in resource distribution also appears to influence health inequalities. Wilkinson's (1993, 1996) work has figured prominently in demonstrating the relationship between income inequality and mortality. His analysis of international data revealed only a weak correlation between life expectancy and GNP per capita, but a strong correlation between life expectancy and the percentage of income received by the less well off 70% of society. Kennedy *et al.* (1998a) found a relationship between morbidity (as measured by self-rated health) and income inequality at the state level, while Boyle *et al.* (1999) concluded that relative deprivation between wards in England had a positive and significant effect on morbidity.

Related to the disparity in resource distribution is the importance of social cohesion, with many believing that the most influential "determinants of health" are rooted in social structure. That is, a more cohesive society results in greater equality of resource distribution, greater levels of public participation, and better health outcomes. Putnam (1993a) is a firm believer in the benefits of social cohesion, or more specifically, the amount of "social capital" a group or society possesses. Social capital "refers to features of social organisation, such as networks, norms, and trust that facilitate co-ordination and co-operation for mutual benefit" (Putnam, 1995; p.66). Specifically, the ensuing community cohesion is due to: *civic identity* (a sense

of belonging to the local community, along with a sense of solidarity and equality with fellow community members); *trust* of fellow community members; *reciprocal help and support*; and *civic engagement* (high levels of community participation in various voluntary associations) (Putnam, 1993a).

Since Putnam's work in Italy, the concept of social capital has been used as a framework to understand spatial differences in economic development (Woolcock, 1998), crime levels (Sampson *et al.*, 1997; Kennedy *et al.*, 1998b), and more recently - health outcomes (Kawachi *et al.*, 1997) and behaviour (Veenstra, 2000; Cooper *et al.*, 1999). While it is apparent that associations exist between deprivation, social capital, and health, the exact nature of the relationships and the importance of the spatial scale at which they exist is still relatively unknown. There is a need for conceptualising *how* place, social capital, and deprivation influence health. This study therefore differs from many others on health, deprivation, and social capital by examining health behaviour (smoking) rather than outcomes. Mortality and morbidity are crude and late-stage indicators; focusing on a behaviour that leads to sickness and death may result in greater opportunities to improve population health and a better understanding of the role of social capital in illness.

Whether social capital plays a role in smoking behaviour has been addressed to some extent by Lindstrøm *et al.* (2000) in their examination of social participation and its role in explaining socio-economic differences in smoking cessation and its maintenance among nearly 12,000 participants of a questionnaire survey. The definition of social participation used by Lindstrøm and colleagues encompasses two of the four constructs of Putnam's (1993a) approach to social capital - namely,

engagement and identity. Specifically, Lindstrøm and his colleagues found that men and women in higher, non-manual social classes had greater odds of smoking cessation than those in the unskilled manual labour classes. The relevant odds ratios for cessation in a multivariate logistic regression model decreased however, when social participation was introduced into the model (the relationship was of the same magnitude for men and women). This study suggests that social capital, or at least one of its four components, may influence health-related behaviour.

Further insights are gained from the work of Cooper *et al.* (1999) on the role of social support and social capital on health outcomes and behaviour using three British data sets (the HEA Health and Lifestyles Survey for 1992, the Health Survey of England for 1993-4, and the General Household Survey for 1994). Their measure of social capital was based on six questions about the area in which individuals lived, including if they enjoy living there, if neighbours look after one another, whether they perceive the area to be safe and to have good facilities for children, leisure, and transport. Thus, rather than being an area-level characteristic, the measure is actually based on individual perceptions of *neighbourhood social capital*. This information was then supplemented with measures of *community activity*, *social integration* and *experience of crime and/or attack*.

In bivariate analysis, Cooper *et al.* found a consistent gradient between female smoking behaviour and neighbourhood social capital, with smoking rates nearly double for those reporting low social capital relative to those reporting very high social capital. The association between social capital and smoking was less consistent for men. After controlling for age, sex, social class, employment status

and material deprivation, the likelihood of smoking for women consistently and significantly increased with decreasing levels of neighbourhood social capital. This gradient was *not* evident for men. Gendered differences in the effects of social capital were also found for stress and reporting of limiting long-term illness (LLTI). That is, results from multivariate analysis reveal an inverse significant relationship between stress and social capital, and greater odds of reporting LLTI with decreasing levels of social capital. These relationships were found for women only.

That social capital may work differently for men and women is also suggested by Mitchell and colleagues' (2000) work on the effects of area and personal attitude to one's community on health. They found a gender difference in the number of people reporting a high number of symptoms amongst those who do not feel part of their community, and amongst those who do. Specifically, women who did not feel part of their community, compared to those who did, had significantly higher odds of reporting a high number of health symptoms. This significant relationship did not exist for men.

This thesis builds on existing research in several ways. First, by addressing the links between smoking behaviour and *each of the four* social capital constructs (trust, reciprocity, identity, and engagement), something which has not been done in other studies. Second, rather than using existing data, often collected for other purposes, questionnaire items were devised with the specific intent of gauging the four constructs of social capital. Third, nurses and teachers participated in the research process through focus groups, which aided in questionnaire development, and discussion groups through which they provided feedback on study results. Finally,

this work extends that on female smoking behaviour by including social capital and workplace characteristics, in addition to socio-economic and demographic variables.

Most work on health outcomes and behaviour has been based on individual characteristics, and although geographers have contributed by incorporating place and area effects, their efforts have concentrated on residential characteristics at ward, regional, and national levels. I am interested in a spatial scale that has often been overlooked - the work place. My interest is due, in part, to recent work on social capital that found informal, small scale associations of friends and family played a larger role in people's lives than formal voluntary groups or associations (Campbell and Wood, 1998). For people who work outside the home, the majority of waking hours are spent in the workplace, thus placing them in a community and social structure that most likely influences their behaviour in some way. Perhaps the smaller scale of the workplace is more influential than social structures at the neighbourhood, regional, or national level.

1.2 Aims and Objectives

The specific aims of this research are:

1. To gain a recent estimate of the proportion of female nurses and teachers in Scotland who smoke, and compare the smoking and cessation behaviour of these two groups.
2. To examine the influence of various individual, social and environmental variables on smoking and cessation.

3. To examine whether the four constructs of social capital have the same effect on smoking and cessation and whether how they operate depends upon the spatial scale at which they are measured.
4. To examine whether the four constructs of social capital operate differently according to occupational group, that is, nurses and teachers.

In particular, my intent is to find out why some nurses and teachers smoke, why others never start, and why others stopped. This endeavour considers their work and home environments, their interactions with colleagues within and outside the workplace, and their levels of trust, networks, and co-operation in the workplace and neighbourhood. In addition to their current circumstances, this project also examines retrospective social capital and deprivation.

1.3 Rationale for the Study Sample

The focus on nurses in this study stems from their history of having higher rates of smoking than other women of similar age and socio-economic background (Adriaanse *et al.*, 1991). Although this is no longer the case in several countries, the lack of recent figures for the UK in general, and Scotland in particular, make it difficult to make substantial conclusions about nurses' (and teachers') smoking prevalence here. Furthermore, even if nurses' smoking is similar to other women in the general population, their rates of smoking are still higher than one would expect for a professional group of health care providers and educators. Primary school teachers are similar to nurses in that both occupations are female-dominated and classified in like manner according to the Registrar General's social classification.

Furthermore, both occupations have been termed as "helping professions" (Engs and van Teijlingen, 1997) and teachers, like nurses, are often expected to provide health education to others. Whether or not women in these occupations smoke can have implications for the type of education they provide in smoking cessation and prevention and in fact whether they will intervene at all in this regard (Nagle *et al.*, 1999; Adriaanse and van Reek, 1987).

In addition to the similarities are the many differences that exist between nurses and teachers in their workplace structure, including the hours of work, the levels of responsibility, the degree of control over work, the friendship networks that develop from working shifts and the daily stresses imposed on individuals. These are factors that may contribute to differences in smoking rates.

1.4 Structure of the Thesis

A considerable body of health research has identified the role of social capital in health outcomes but little work has attempted to explain how social capital and health outcomes are linked explicitly. How does a lack of social capital actually make a person's health worse? This study aims to address this by considering the links between social capital and a specific health-related behaviour - smoking - rather than focusing only on the health outcome. If smoking is influenced by social capital, health outcomes must also be affected by social capital. This research will therefore bridge the social capital/health outcomes divide.

It goes further, however, to consider how social capital may be measured at a variety of spatial scales and in various contexts, such as the neighbourhood and workplace.

To date, the majority of the work on social capital has ignored relationships in the workplace, focusing mainly on the neighbourhood in which people reside. This work will tease out the importance of social capital measured at national, regional, neighbourhood and workplace levels to identify which, if any, influence people's smoking behaviour. It will also include a longitudinal dimension, recognizing that conditions in a person's childhood environment are the key determinants of smoking initiation. Thus, this study aims to contribute a greater understanding of social capital by examining: (i) health behaviour rather than outcomes (focusing on behaviour that leads to sickness and death may result in greater opportunities to improve population health); (ii) social capital at various spatial levels (workplace, neighbourhood, region and nation) and comparing the effects of each on health behaviour; (iii) social capital as defined and experienced by individuals and groups.

1.5 Conclusions

To conclude, if social capital does indeed lead to positive health outcomes (and possibly healthy behaviours), less crime, and economic prosperity, then we would want a better understanding of it - especially how it relates to deprivation and income - and ultimately how to create it within our communities. From a geographical perspective, we need to examine further the network patterns and spatial scales at which social capital exists. Although originally developed as a property of individuals, social capital is now commonly applied as a property of groups, nations, and communities. However, there is a paucity of research on the appropriate spatial scale to employ in various circumstances, and the types of organisations and networks that most effectively embody or generate social capital.

CHAPTER TWO - THEORISING HEALTH

2.1 Introduction

This chapter firstly provides background on how health has been defined and subsequently viewed within public policy. Secondly, this chapter examines how health has been defined and studied by geographers and what role *place* has been given to understanding health behaviour and outcomes. Thirdly, it summarizes evidence for the view that social determinants of health, specifically social support and social capital, are paramount and should be considered in health geography research. Lastly, this chapter reviews health behaviour from two standpoints: individual and interpersonal.

2.2 Approaching Health

What constitutes health and how to measure it are two questions without clear-cut answers. The biomedical model of health, which has dominated modern Western medicine for over a century, views the body as a machine, i.e., something that can be repaired when dysfunctional. Health is thought of in terms of an absence of objective signs that the body is not functioning properly:

> "Health is carefully structured in terms of cure rather than prevention, disease rather than the promotion of health and welfare, and the examination and treatment of individual rather than of social conditions..." (Townsend *et al.*, 1988, p. 6).

The biomedical model is limited then in that:

> "the body is isolated from the person, the social and material causes of disease are neglected, and the subjective interpretations and meanings of health and illness are deemed irrelevant" (Nettleton, 1995, p. 3).

The biomedical model has been criticized of late as various disciplines offer alternative ways of interpreting medicine, health and healing. The biomedical model has also been challenged in the context of rising health care costs and the questioning of biomedicine's efficacy. Evans and Stoddart (1994) note that while many governments have recognized the broader determinants of health (e.g., income, education, housing, social support) their health policies rarely reflect this recognition. Instead, health policies consider new drugs, equipment, or diagnostic and therapeutic manoeuvres as most essential to improving health. Evans and Stoddart (1994) question why this is the case, especially when there is no superior evidence for the effectiveness, still less the cost effectiveness, of such health care interventions. Woodward and Kawachi (2000) go so far as to state that:

> "the failure of economists and policymakers to incorporate an explicit consideration of the population health impact of their choices may partly explain why little progress has been made in reducing health disparities despite decades of evidence documenting their existence" (pg. 927).

Therefore, many researchers are increasingly advocating a holistic model of health - one that includes emotional and social well-being, and functioning. This trend towards a socio-ecological model follows the urging of the World Health Organization and others (WHO, 1947; Bury, 1982; Katz, 1987) to use a broader definition of health and to recognize the importance of social, cultural and economic determinants of health status.

Criticism of the biomedical model does not mean that all of its elements should be rejected. Rather, the biomedical in and of itself is incomplete, and can only provide a partial understanding of what comprises and affects health. Tarlov (1996) summarizes the determinants of health in four categories: genes and biology; medical care; health related behaviours such as diet, exercise, and tobacco use; and the social environment in which living takes place. After reviewing a wide range of evidence he concluded that, even though all of the determinants contributed, it was the social environment that was the most important in determining population health.

Specifically, genetic inheritance may account for 5 per cent or less of the total disease burden while medical services have contributed about 17 per cent to gains in life expectancy in the twentieth century. Health related behaviours accounted for anywhere between 25 and 60 percent of the inequalities in health status in the UK. However many of these behavioural risk factors are embedded in the social environment and because all the determinants interact it is difficult to assign a specific quantitative value to social characteristics. Nonetheless, even a crude examination of data suggests:

> "that a substantial fraction of the variation in health from one population to another, or among various strata within a single population, is unexplained by variations in genetic inheritance, medical care and behavioural risk factors" (Tarlov, 1996, p. 75).

2.3 Public Health Policies

The socio-ecological view of health is important in its consideration of both individualistic and functional/adaptational perspectives (Curtis and Taket, 1996). That is, it recognizes that health is due in part to a person's perspectives and views, but also that their ability to perform certain tasks and roles is very much dependant on their place in society. This has important implications for public health policies, one of which is that integrated policies are needed for improving population health. Corrective aims must be taken to reduce material deprivation, invest in infrastructure, improve work conditions; and lower social gradients (Tarlov, 1996).

Policies and programs for health promotion need to target not only risk behaviours such as smoking, diet and exercise, but also the wider socio-economic and psychological circumstances in which they are embedded. This is because "...changes in behaviour.....are unlikely to be sustained if individuals return to an unchanged environment and its indigenous stressors" (Graham and Der, 1999b). There is consequently a need to examine the social and physical environments in which individual behaviour occurs. The next two sections thus examine health in the context of geography in the first instance, and social theory in the second.

2.4 Medical Geography and the Geography of Health

2.4.1 Introduction

An early, and somewhat vague, definition of medical geography states that it is "the application of geographical methods and skills to medical problems" (McGlashan, 1972; p. 14). Later, medical geography was described as involving:

> "variations in the distribution of disease and treatment, in the health-enhancing or health-damaging activities groups in space carry out, in the uses of health care provision and in the allocation of resources between territories" (Eyles and Woods, 1983; p. 29).

Essentially medical geography encompasses two broad areas of study (Jones and Moon, 1987; Johnston *et al.*, 1994). The first involves the spatial ecology of disease and the relationship between the social and physical environments and the health of populations. The second area focuses on the geographical organisation of health care, and examines issues of service utilisation, provision, and accessibility. These two areas cover most, although not all, work in medical geography.

Over time, the meaning and research foci of medical geography have evolved considerably – to the point where many have deemed the term a misnomer. To better understand what medical geography entails, the directions in which research in this field is heading, and how geographers have become involved in the study of disease and health, it is necessary to review the evolving definitions of the sub-discipline. This will help explain why some researchers have abandoned the term "medical geography" in favour of "geography of health".

2.4.2 History

Linking health to one's surroundings is not a new phenomenon – more than 2500 years ago Hippocrates recognised the importance of locality, social and economic geography, hydrology, and climatology on well being. In *On Airs, Waters and Places* he wrote:

"Whoever wishes to investigate medicine properly, should proceed thus: in the first place to consider the seasons of the year...Then the winds, the hot and the cold, especially such as are common to all countries, and then such as are peculiar to each locality. We must also consider the qualities of the waters... In the same manner, when one comes into a city to which he is a stranger, he ought to consider its situation, how it lies as to the winds and the rising of the sun; for its influence is not the same whether it lies to the north or the south, to the rising or to the setting sun...and concerning the waters which the inhabitants use, whether they be marshy and soft, or hard, and running from elevated and rocky situations, and then if saltish and unfit for cooking; and the ground, whether it be naked and deficient in water, or wooded and well watered, and whether it lies in a hollow, confined situation, or is elevated and cold; and the mode in which the inhabitants live, and what are their pursuits, whether they are fond of drinking and eating to excess, and given to indolence, or are fond of exercise and labor, and not given to excess in eating and drinking."

(Translated by Adams, 1994)

This epitomises the Greek view that health depended on both preventive measures in the social and physical environment, and internal medical intervention. Although the Romans adopted much of Greek thought on health, they gave more credence to internal medicine. The fall of the Roman Empire saw a movement away from this emphasis on medical knowledge in Western medicine and a shift towards supernatural and religious causes of disease and ill health, with healing provided by prayers and repentance (Jones and Moon, 1987).

It would be some time before the medical practitioner reconsidered the influence of the social and physical environments on health outcomes. In fact, aside from a few significant nineteenth century studies, medical geography is a relatively recent phenomenon (McGlashan, 1972) and one that can be partially credited for the current focus on the broader determinants of health.

Up until the last 25 years or so, the bio-medical model dominated geographical and other disciplinary research and policy on what determines health. Within this model, ill health is viewed as an objective medical state, where researchers and clinicians use sophisticated scientific equipment and procedures to search for the organic bases of disease. The major outcomes they measure are morbidity and mortality, although service use data has also been analysed. Morbidity and mortality are crude and late stage indicators of health, however (Tarlov, 1996), and service use data often reflects individual clinicians' policies and people's illness behaviour, rather than providing information about the impact of treatment on the patient's life (Bowling, 1997).

Early studies in medical geography, taking the lead from the bio-medical model of health, examined morbidity and mortality by looking at their distribution in space, mapping the distribution, and comparing differences at various spatial levels. The purpose of these studies was to uncover spatial patterns of environmental factors that may aid in explaining the causes of disease. An early, and often-cited, example of this type of research is that conducted by Dr. John Snow in the 1850s within London (Snow, 1855). A single dot distribution map illustrated a spatial pattern of cholera, with mortality varying according to which company supplied water to the household. Mortality rates were eight times higher in households whose water was supplied by

Southwark-Vauxhall (their water was taken from the Thames at a point polluted by sewage) than those whose water was supplied by Lambeth (their intake was at a less polluted point).

Following Snow's work, medical geography research has maintained close ties with epidemiology. Studies have described disease patterns, tracked disease diffusion over time and space, and attempted to test spatial correlations between diseases and environmental factors. Description of disease patterns and diffusion are well exemplified by the geography of AIDS (Gould, 1993; Loytonen, 1991; Shannon *et al.*, 1991; Smallman-Raynor and Cliff, 1990). Researchers have examined its spatial pattern and diffusion, mapped major transmission routes, and modelled its distribution at global, national, and regional levels. Geographers have examined rates and patterns of numerous other diseases and afflictions including measles (Cliff and Haggett, 1984), influenza (Pyle and Patterson, 1983), asthma (Singleton *et al.*, 1995), and spina bifida (Lovett and Gatrell, 1988).

Examples of searching for a causative relationship between environment and disease include Openshaw *et al.'s* (1988) examination of the link between nuclear power stations and childhood leukaemia, Giggs' (1983) spatial patterning of mental illness, and Worth's (1975) study of coronary heart disease mortality rates of Japanese men living in Japan, Hawaii, and California. However, as McGlashan (1972, p. 14) points out, while "One may consider geographical *evidence* on medical hypotheses....It would be improper to claim that geography provides *proof*." That is, spatial patterns may occur by chance; those that do not occur by chance may or may not have a cause and effect relationship with the environment. What geographical evidence

often provides is the basis for a further and more in-depth examination of the relationship between disease and environment.

2.4.3 The Role of Place in Health

Critical of the bio-medical model, the geography of health approach goes beyond the traditional paradigm of viewing health in accordance with physical or biochemical markers. Geography of health research recognizes and accounts for the importance of broader determinants of health, that is, the social and physical environments in which people live and work. Research in this area has revealed that population health is a *gradient* when assessed against measurements of income, education, type of work, and social support (Blaxter, 1990; Frank and Mustard, 1995). In other words, the health status of a certain class will be better off than classes below it but worse off than the classes above. Differences in health have subsequently become a key area of research in health geography, and have been assessed at various spatial levels.

Deprivation, or area-based measures of material circumstances, is one approach to measuring inequalities in health. This approach involves the classification of areas rather than individuals, and is often used when data on the latter are unavailable. Over the last decade several researchers have developed means of measuring social deprivation. Townsend, an author of the Black Report, constructed a census-based index of deprivation comprising the proportion of households with access to cars, percent unemployed, percent of owner-occupiers, and crowding. He found this measure related strongly to mortality in the Northern Region of England (Townsend *et al.*, 1988). That is, the greater the deprivation, the greater the mortality rate.

In Scotland, a similar measure of deprivation was also strongly related to area differences in mortality (Carstairs and Morris, 1991). The Carstairs Score is derived by combining four variables taken from small area census data – overcrowding, male unemployment, low social class, and no car – and appropriately weighted.

There are several other area-based measures of deprivation. One of these is the Jarman underprivileged area (UPA) index, developed as a predictor of demand for general practitioner services, rather than deprivation *per se* (Jarman, 1983). Another is the composite index developed by Frohlich and Mustard (1996) for use in Manitoba, Canada. They found that differences in health status across enumeration districts was largely explained by six socio-economic census variables: labour force unemployment among persons aged 15 to 24; unemployment among those aged 45 to 54; percentage of single parent female households; percentage of the population aged 25 to 34 having graduated high school; female labour force participation; and the average value of owner-occupied dwellings. Kearns *et al.* (2000) have recently attempted to create a new measure for area deprivation in Scotland. This index is based mainly upon non-census variables and is calibrated at the spatial level of the postcode sector. Indicators included in this index are overcrowding, home contents insurance weightings, unemployment claimant count, standardized mortality ratio 0-64, non-participation in higher education, and numbers claiming Income Support benefit.

While contributing substantial empirical evidence of a relationship between health and material deprivation, the work of Townsend *et al.* and Carstairs fail to account

for the *relative* location of the areas within which this relationship is examined. These and other studies on health and deprivation often consider areal units as "passive 'containers' of problems rather than as places imbued with social meaning" (Gatrell, 1997, p. 142). Researchers have thus begun to address the need of examining the role of relative deprivation, as well as differentiating between the more objectively defined *place* and the subjectively defined *space* (Ecob and Macintyre, 2000; Mitchell *et al.*, 2000; Boyle *et al.*, 1999).

Wilkinson's (1993, 1996) work has figured prominently in demonstrating the relationship between income inequality and mortality. His analysis of international data revealed only a weak correlation between life expectancy and GNP per capita, but a strong correlation between life expectancy and the percentage of income received by the less well off 70 percent of society. He argues that there is a relationship between life expectancy and GNP per capita only in countries with a GNP/capita of $5000 or less (1984 dollar value). For countries with a GNP above this threshold, it is the equality of its distribution rather than the absolute amount that matters.

Kennedy *et al.* (1998a) found a relationship between morbidity (as measured by self-rated health) and income inequality at the state level, while Boyle *et al.* (1999) concluded that relative deprivation between wards in England had a positive and significant effect on morbidity. Boyle and colleagues also found that morbidity levels varied with the proportion of migrants in ward populations, thus concluding that policies of resource allocation must consider variations in deprivation between areas in order to be efficient.

Ecob and Macintyre (2000) used multilevel models to examine four health related behaviours in the West of Scotland. A simple 'area effect' was found only for poor/unhealthy diet, while area deprivation was associated with diet, as well as exercising less than once per week and being a current smoker. Furthermore, poor diet was related to area deprivation only at low levels of individual deprivation, demonstrating the importance of relative affluence. Also, the association between area deprivation and exercising two or more times per week and being a current smoker differed between adolescents and adults. This study suggests the need to consider contextual influences on health damaging or enhancing behaviours.

The work of Mitchell and colleagues (2000) in Britain contributes evidence of an 'area effect' on health. Their multilevel analysis showed that the degree of deindustrialisation experienced in areas in the 1980s has an independent association with the health of its residents, with individuals in areas of high deindustrialisation reporting a higher number of symptoms (e.g., headaches, colds and flu, painful joints). They also found a significant relationship, independent of individual and area characteristics, between a person's health and whether they felt part of their community; this lending support for a possible link between health and social capital.

Reijneveld (1998), also using multi-level techniques, found that living in a deprived area in Amsterdam, the Netherlands, contributed to a higher prevalence of smoking. The 'area effect' remained even after controlling for individual socio-economic status and adjusting for age and sex.

These studies reveal the negative effect area deprivation and income inequality can have upon health behaviour and outcomes. "However, emergent concerns focus on an alternative view of difference: recognition that difference in health beliefs, practices and experience of groups defined by class, 'race', sexuality or gender (or combinations of these identities) must be acknowledged and made visible in research" (Kearns, 1995). It is insufficient to simply identify patterns of health outcomes or behaviour, and "people should not be reduced to statistical aggregates, and places should not be reduced to generalisations" (Jones and Moon, 1993). Groupings of people and places may be adequate for description but not entirely so for explanation of why there are differences in health behaviours and outcomes.

While we know that both the social and the physical environment affect health, what is less understood are the mechanisms by which this occurs since they may operate differently for various individuals and for different places. Currently, theorisation in the literature of how place interacts with health is quite sparse with researchers recognising the need to integrate what does exist and develop it further (Curtis and Jones, 1998).

Before discussing how 'geography matters' in health, it is therefore beneficial to differentiate between 'space' and 'place'. *Space* is a somewhat elastic and abstract concept and may be thought of as the medium in which social relations occur, and is itself the outcome of these relations" (Kearns and Joseph, 1993). Space is thus socially constructed. *Place* can be thought of as a more specific and concrete concept, such as location or a locale. Subsequently, we may also consider a *sense of*

place, that is, the meaning that such a location or locale has for individuals or groups. Space and place comprise the contextual effects that "operate where the health experience of an individual depends partly on the social and physical environment in the area where they live" (Curtis and Jones, 1998, p. 648).

Until recently few studies on area variations of morbidity and mortality had considered the contextual effects of which Curtis and Jones speak. However, Macintyre *et al.* (1993) noted some time ago that we need to focus on places (the contextual) and not just people (the compositional) when considering health variations. Following an analysis of two areas in Glasgow differing in socio-residential characteristics, they concluded, "whatever one's personal characteristics, the opportunity structures in the poorer area are less conducive to health or health promoting activities than is the better off area" (p. 223). In other words, the better off areas offered more readily available and cheaper healthy foodstuffs, more sporting and recreation facilities, better public transport, etc. This means acknowledging that area differences in health are not entirely attributable to composition but are, in some way, influenced by the social and physical environment in which people live.

Curtis and Jones (1998) offer three frameworks to aid in understanding how these contextual effects may operate on health risks and the resulting health variations among populations. The first focuses on physical and biological risk factors such as environmental pollution, climate, and housing quality, and how they influence the spatial patterning of human disease. For instance, socio-economic inequalities are often related to exposure to physical and biological risks, with low-income groups more likely to experience these risks than those with higher incomes. This may be

due to not having the knowledge, money or social and political connections to either move from a high-risk area or prevent their home environment from being host to an industrial or physical hazard. This framework also considers the psychosocial impacts of living in or near a hazardous physical environment, as well as the spatial diffusion of diseases in human populations.

The second framework deals with the role of space and place in social relations. This is exemplified by Bourdieu's concept of *habitus*, or an individual's perceptions and dispositions, and ideas that "embrace both structural and lifestyle explanations" (Gatrell, 1997, p. 153). The habitus is influenced by structure (context) but also acts as a mediating factor between structure and agency (actions). We each create our own habitus, operating in semi-autonomous fields that comprise society. Within these fields occur the struggles due to an unequal, structured system of social relations. Struggles revolved around the competition for access to goods and resources, or the various forms of capital, namely: economic, social, cultural, symbolic, and physical. These struggles over capital reveal how choices concerning health and lifestyle may be constrained. For instance, the upper class may create a recreational "landscape of consumption" including exclusive gyms, restaurants, and sports holidays, while the landscape for those in the lower class may include pubs, streets, and recreation grounds (Curtis and Jones, 1998).

The third framework offered by Curtis and Jones (1998) is that of landscapes and 'sense of place'. A holistic approach may consider how mental and physical well-being interact, how mental health is associated with place, and how individuals ascribe meaning to their surroundings. Gesler's (1992; 1993) concept of 'therapeutic

landscapes' sees certain places as having achieved a reputation for healing the body, mind and soul. The features of these landscapes, both natural and humanly constructed, evoke an atmosphere of social equality and feelings of warmth and identity. Curtis and Jones conclude their summary of these frameworks with the view that using a variety of complementary theoretical approaches as opposed to one grand theory may be more useful in understanding health inequalities.

Gatrell (1997) offers further insight into the role of place in the link between illness and relative deprivation by encouraging the consideration of cognitive factors and social comparisons. That is, income differentials may be psychologically detrimental with individuals comparing themselves to those around them and once aware of disparities, experiencing a biological response that could lead to sickness and disease. Gatrell emphasises the importance of place, as well as the social relationships that operate within, and offers two concepts of social space. First, we can view social spaces as social networks whereby a set of individuals possess functional relationships that may constrain or encourage each other's behaviour. Alternatively, we can view social spaces as shared attributes or the activities and characteristics people have in common. Bourdieu's concept of habitus fits in with this view of social spaces as he locates social practices, occupations and cultural tastes within them. People with shared attributes, e.g., income level, may have different tastes or place different priority on exercise, leisure, and food, thus resulting in the production and reproduction of inequalities in health. Gatrell (1997) concludes with the need to fuse the social and the geographical aspects of life, furthering the idea put forward by Jones and Moon (1993, p.519) in their plea for geographers to see "space as place with a meaning for everyday life".

2.4.4 The Workplace and Health

The workplace requires examination as a site *and* influence of health behaviour given its prominence in the lives of the working population. The physical nature of the workplace, e.g., air quality, and the safety level of the work role can affect an employee's health. Likewise, the workplace may have many implications for health via the way in which it is socially organised, the nature of interpersonal relations at work, and work-home conflicts.

According to Tones and Tilford (1994) a conventional view of work and health sees the "workplace as a source of pathogens" (p. 200). These pathogens range from general work-produced stress to specific industrial hazards. Stress in itself is quite difficult to define and they note that the World Health Organisation lists an extensive array of its causes in the workplace. The causes include poor physical working conditions, shift work, being over worked, being under worked, role conflict, role insecurity and so on. Following an analysis of work environments in Canada, Polanyi *et al.* (1997) also concluded that health is affected via the way in which the workplace is organised, the nature of inter-personal relations at work and work-home conflicts.

Of interest here is the way in which the workplace affects health behaviours. Eakin (1997) notes that, for example, smoking, excessive drinking, lack of exercise and unhealthy dietary practices are all influenced to varying extents and in varying ways by work and working conditions. For instance, if a workplace lacks smoking restrictions, workers may be subjected to second-hand smoke, and shift work may make it difficult for workers to get adequate sleep, eat regular meals or participate in

exercise classes or community activities. Additionally, particular work environments may actually encourage unhealthy behaviour such as alcohol consumption where it is seen as stress-relieving activity, or as part of client seeking and marketing. Eakin also states that low occupational status at work leads to low self-esteem and powerlessness, which in turn have been associated with health related-behaviours such as smoking, drinking and taking drugs.

Therefore, the workplace is not simply a place in which there are occupational health and safety issues, nor is it just a location in which to set health promotion programmes. Rather, work and the workplace influence behaviour in subtle and not so subtle ways. The workplace itself is an important determinant of health behaviour.

2.4.5 Conclusions

Recognition of the broader determinants of health, and a move away from the narrower focus of the biomedical model, is one reason many researchers prefer the term 'health geography' rather than 'medical geography'. Kearns and Gesler (1998) give two other reasons why this shift in terminology is more than just a simple name change. First, health geography represents a community of scholars who have and continue to reform medical geography. Second, it positions geographers closer to social scientists and planners who examine a wider range of health issues from behaviour and outcomes to service utilization and provision. That is,

> "health is an attractive rallying point for geographical inquiry, opening research opportunities that move beyond illness and medical interventions to a state of becoming that takes place *in place*." (Kearns and Gesler, 1998, p. 2).

Given this shift towards a more holistic view of health and recognition of its broader determinants, geographers must consider the social environment as well as the physical in any analysis of health behaviour and outcomes. The next section reviews the concepts of social support and social capital and their relationship to health, and explains the need for understanding the geography of social capital.

2.5 Social Theory and Health

2.5.1 Introduction

The health experience of an individual depends in part on the social environment in which they live and work (Campbell and Wood, 1998; Curtis and Jones, 1998; Susser, 1994). Indeed, social contexts may encourage or discourage the likelihood of engaging in health-enhancing behaviours, while social support may influence health outcomes via changes in physiological processes. Numerous studies have linked social support to health *outcomes* at the individual level; less understood however are the features of social and community contexts that contribute to healthy *behaviours* and lifestyles. The concept of social capital, defined as social networks and the norms of trust and reciprocity that ensue, has thus garnered the interest of health researchers and is one of the cornerstones for this particular research endeavour. This chapter reviews social support and social capital and their relationship with health behaviour and outcomes.

2.5.2 Social Support and Health Outcomes

Social support is:

> "an exchange of resources between at least two individuals perceived by the provider or recipient to be intended to enhance the well-being of the recipient" (Shumaker and Brownell, 1984, p. 31).

Social support involves the provision of assistance, both tangible and intangible, and protection to others, and is present to the extent that an individual perceives a sense of belonging to a network of communication and mutual obligation (Kaplan *et al.*, 1993). These networks, and thus sources of support, may comprise a variety of individuals, such as friends, family members, co-workers, and members of religious, leisure, or voluntary associations. Langford *et al.* (1997), in their review of nearly 85 articles on social support in aged populations, conclude that social networks (structure of people), social embeddedness (quality of connectedness to people in the networks), and social climate (the 'personality' of an environment) are necessary prerequisites for the occurrence of social support. If these prerequisites are present, then social support is better able to provide its emotional, instrumental, informational, and appraisal attributes.

Research into the links between social support and health has existed since Durkheim (1897) wrote of the importance of social relationships in the prevention of suicide (as cited in Callaghan and Morrissey, 1993), and a growing body of evidence from the last 20 years suggests that social support may be an important determinant of physical and mental health. There is a great deal of evidence, in the form of large prospective studies, showing that less socially integrated individuals have higher mortality rates from all causes (House *et al.*, 1988). Specifically, higher levels of social support have been related to reductions in mortality rates (Berkman and Syme, 1979; Schoenbach *et al.*, 1986), and reductions in the incidence of both mental

(Buschmann and Hollinger, 1994; Ducharme, 1994) and physical illnesses (Haynes and Feinleib, 1980; Schwarzer *et al.*, 1994). Furthermore, evidence exists on its facilitative role in promoting healthy behaviour with regard to diet, smoking, and exercise (Marmelstein *et al.*, 1986; Umberson, 1997; Manning and Fusilier, 1999).

Two major theories of social support may aid in understanding how it affects health - "buffer" theory and "attachment" theory. The first suggests social support acts as a buffer to protect people from the stresses of life and that, through interpersonal exchanges within a social network, individuals are influenced and supported in their health behaviour choices. A review of buffer theory, the most widely researched theory of social support, reveals the strongest relationship between social support and health is for elderly people and support from family and friends is the strongest variable in reducing the effects of stress (Callaghan and Morrissey, 1993). Also, women appear to gain more from social support than men do. The buffer theory is not without criticism, however. First, it is not known whether multiple stressors need to be buffered by multiple supports, or whether one support will suffice. Second, life events can result from, or cause changes in, social support and consequently it is difficult to understand or define a causal relationship between the two using cross-sectional data.

Attachment theory proposes that secure attachments formed during childhood provide the foundation upon which an adult is able to form socially supportive relationships, and that a securely attached individual will be more resilient in the face of psychological stress. Recent work suggests there are limits to an insecure individual's ability to respond appropriately to stress (Fonagy, 1994). However, this

work is still in its infancy, and although it provides an alternative view of social support, attachment theory is limited in that complex longitudinal studies are necessary in order to test the premise of successful childhood experiences leading to similar adult attachments (Callaghan and Morrisey, 1993).

In addition to the importance of social support in promoting behaviours that lead to better physical and mental health, is its role in affecting physiological processes and thus influencing mortality. A person with supportive ties (that is, individuals who perhaps provide useful information or reaffirm positive aspects of that person's life) may appraise events as less stressful, thus influencing the psychological processes of mood states, feelings of personal control, and self-esteem. These psychological processes are thought to influence the cardiovascular, endocrine, and immune systems, thus having implications for relevant disease outcomes (Kiecolt-Glaser and Glaser, 1995).

Evidence from a review of nearly 50 studies reveals that individuals with high levels of social support had lower blood pressure than individuals with lower levels of social support and that social support was linked to better blood pressure regulation in hypertensive patients (Uchino *et al.*, 1999). The latter usually involved spousal assistance in controlling blood pressure. The review also shows that social support can reduce the magnitude of cardiovascular changes during stressful circumstances, that is, the presence of a supportive person was associated with lower blood pressure and heart rate changes.

The findings from approximately 20 studies on social support and immunity suggest that the former is related to a stronger immune response - "....individuals with high levels of social support had stronger natural killer cell responses (i.e., ability to kill susceptible tumor cells)..." than individuals with lower levels of social support (Uchino *et al.*, 1999, p. 147). This is supported by Cohen *et al.* (1997) who found that individuals with more diverse social networks crossing over several domains such as work, church, and home, were less likely to develop clinical colds than those with less diverse networks. Stress is thought to influence the immune system via the release of hormones, namely catecholamines and cortisol, while social support may reduce the 'flow' of these endocrine hormones and thus make one less susceptible to illness.

However, Uchino and his colleagues (1999) note some limitations with the nearly 70 studies they reviewed on social support, physiological processes and health. First, many of the studies used cross-sectional rather than longitudinal designs. Subsequently, there are few examinations of outcomes over time. Second, the conditions under which social relationships are most beneficial need more attention. Not all close relationships are uniformly positive. That is, if an individual is part of a social network and receives support, they may be expected to reciprocate perhaps constituting a source of stress in itself.

There are other issues to consider when looking at the relationship between social support and health. First, "there appear to be as many definitions and measures of social support as there are studies of it" (Cooper *et al.*, 1999, p. 12). Second, few researchers have addressed the problem of defining health. Although many

researchers have adopted the holistic definition of health put forth by the World Health Organization, their measures have mostly been specific indices of physical, emotional, or social function (Callaghan and Morrissey, 1993). Third, many studies use a correlational design, thus the findings cannot assume a causal link between social support and mortality or stress. Finally, it is difficult, and at times unethical, to control for other risk factors. Given the complexity of social support, it is vital to consider all these factors prior to conducting research into its relationship with health.

Social support influences health, either positively or negatively, at an individual level. Social capital has thus been proposed as a potential means for understanding how community level factors may influence health; the following section thus offers a critical review of this concept.

2.5.3 A Critical Review of Social Capital

Introduction

The notion of social capital has enjoyed immense popularity in the last decade following its introduction almost 30 years ago.[i] It has, however, been subject to a variety of interpretations within sociology and interdisciplinary social science, including geography. Although the roots of social capital are grounded in anthropology, sociology, political science, and economics, it is defined most tangibly in the latter category; that is, as physical infrastructure or financial assets (Wall *et al.*, 1998). Associated with these different approaches to social capital are the spatial levels at which it has been measured or said to exist. These levels have ranged from relationships between two people in the same household to associations between

population sub-groups in a region or nation. The ascription of several meanings to, and the increased use of, the concept calls for greater understanding and clarification of what social capital really signifies. Furthermore, it is necessary to theorize the geographical application of social capital in order to determine whether the apparent spatial elasticity of the concept affects its utility as a social construct.

The History of Social Capital

The theories underlying social capital are not new ideas. For over a century scholars have examined social systems, structure, and cohesion and their consequences for individuals and communities with regard to various issues, such as income redistribution, opportunities for education, community vitality, social mobility, and health. In some ways, the term 'social capital' recaptures ideas formulated in the late 19th century by Karl Marx and Emile Durkheim. Marx believed a society's economic base caused the patterns of behaviours, beliefs, and class divisions within that society, and specifically that capitalism, where a few members controlled the means of production, resulted in social inequality and class conflict (Marx, 1967 [1894].) This class conflict would cease with the development of a communist society where people contributed what they were able and took only what they needed. The latter part of this sentiment is echoed in the concept of social capital, where a successful community has a social organization that results in mutual benefit for its members. This does not imply however, that social capital can only exist in purely egalitarian societies.

Durkheim focused on integration and the personal benefits of social contacts and ties (Durkheim, 1951 [1897]). He argued that mental illness (including suicide) was more likely to develop in societies with greater social and residential mobility, and deviation from the "typical" nuclear family. Analysing suicide rates in France, he found evidence to support his theory that the decision to take one's own life is strongly influenced by the degree to which a person is integrated into society. Integration into society is a key concept of social capital where the focus is on civic identity and engagement, as well as trust of fellow community members.

Present day scholars agree that social capital represents a resource, that is, stocks of social trust, norms, and networks that people can draw upon to solve a problem common to many or to enhance some other social feature such as economic vitality, governance, or education. An additional key generalization is that social capital is a collective dimension of society and thus external to the individual, thereby distinguishing it from the concepts of social networks and support. That is, while social capital is a feature of social structure, the other concepts are associated with attributes of individuals. These basic agreements are however, fraught with denotations. Wall *et al.* (1998) identify three distinct contemporary uses of the term; each of which transpires from the perspectives of Pierre Bourdieu, James Coleman, and Robert Putnam.

Bourdieu

The sociologist Pierre Bourdieu defines social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or

less institutionalised relationships of mutual acquaintance and recognition" (1985, p. 248). Social capital comprises two elements: first, the social relationship itself that enables an individual to obtain resources held by an associate; and second, the quantity and quality of those resources. Social relationships and networks are not a natural given and must be constructed; indeed, the construction of sociability is deliberate and for the purpose of creating and exchanging resources. Furthermore, emphasis is on maintaining or improving one's position in a hierarchical social structure within the group (Bourdieu, 1985).

Bourdieu's model of social capital can be viewed within the context of *field* (a competitive system of social relations) and *habitus* (a set of expectations and understandings based on one's own experiences but shared by people with similar class or gender positions). Within the context of field and habitus exist three forms of capital: economic, cultural, and social, all of which are interchangeable. Economic capital is based on material exchange and includes monetary and property assets. Cultural capital is the compilation of non-material forces that influence an individual's success; these forces include family, background, and investment in education.

Through social capital, individuals can access economic resources (e.g. subsidized loans, investments tips, protected markets) or they can increase their cultural capital via contacts with experts or individuals of refinement (Portes, 1998). In the same vein, all other types of capital can be derived from economic capital, through varying efforts of transformation. Bourdieu makes it clear however, that while social and cultural capital can be reduced to economic capital, the processes by which they are

transformed cannot. Portes explains that "transactions involving social capital tend to be characterized by unspecified obligations, uncertain time horizons, and the possible violation of reciprocity expectations" (pp. 4, 1998). In fact, social and cultural capital remain effective because they conceal their relationship to economic capital (Bourdieu, 1985).

Bourdieu's ideas have been adopted in geography; Cloke *et al.* (1998) use Bourdieu's ideas as part of their framework for interpreting residents' views of their rural lifestyle. The notion of maintaining or improving one's position in society is apparent in comments about their housing and leisure activities that distinguish the "countryside" lifestyle from modern or city living, which is perceived as less desirable. While Cloke and his colleagues agree that *habitus* acts as the setting for social activity and everyday life, they are less inclined to agree with "Bourdieu's reciprocal mapping of the *habitus* onto social fields" (1998, p. 168) Their doubts are partly due to "lack of a 'spatiality' of *habitus*" (p. 168).

Podmore also draws attention to *habitus* as based on shared dispositions and social practices rather than relationships of physical proximity (1998). Following an analysis of "loft living" in Montreal she concludes "this social group [loft dwellers] makes use of the location of the inner city as a form of distinction as well as a social location" (1998, p. 287). Furthermore, the "typical" loft lifestyle popularised and established by media of books, films, and television, gives Montreal loft dwellers characteristics that allow them to carve a niche for themselves among all city residents.

In an analysis of neotraditional urban form, McCann (1995) concludes that upper middle class house buyers strive to create a *habitus* for themselves. McCann argues that industrial restructuring in the US has led to new class factions, each actively seeking to acquire symbolic capital (a house in a neotraditional urban development) and "establish its own habitus by which it can be identified and with which it can be identified (1995, p. 227).

Gatrell (1997) focuses on relative location and spatial arrangement in the examination of deprivation and health and feels that Bourdieu's concept of social space (and habitus) can help 'fuse' the social and geographical influences on health outcomes. Bourdieu locates social practices, occupations and cultural tastes in social spaces. The implication is that people of different income classes and social spaces have different tastes for food, exercise and leisure, thus resulting in the production and reproduction of inequalities in health. Gatrell notes that although Bourdieu's focus is not on geographical space *per se*, he does recognize that appropriating resources depends on one's relative location in geographical and social space. Gatrell concludes that we need to employ theories such as Bourdieu's in our attempts to explain health inequalities.

However meritorious, Bourdieu's concept of social capital remains somewhat vague. Even though he defines economic and cultural "resources", there are so many different types that it would be difficult to ascertain which were contributing most to the accumulation of social capital. Furthermore, the only way to know social capital exists, or was instrumental in increasing economic capital, is after the fact (Smart, 1993 as cited in Wall *et al.*, 1998, pg. 307).

The concept is also fatalistic and does not make great allowance for the role of 'choice'. Even though he believes Bourdieu's work has value, Williams (1995) notes that:

> "the true explanation for actors' behaviour is seen to reside in the mysterious, murky depths of the habitus, and as a consequence, 'choice' is largely underplayed" (pg. 588).

Coleman

Like Bourdieu, James Coleman used social capital to describe resources available to individuals due to their social ties (Coleman 1988). Viewing social capital as a bridge between sociologic and economic approaches, Coleman places economic choices in the context of social structure. He assumes that people act rationally and seek to increase their individual human capital, and thus, their socio-economic prosperity.

Coleman views human capital as comprising the abilities and skills an *individual* acquires over time that enable new ways of acting. "Human capital is approximately measured by....education and provides the potential for a cognitive environment....that aids learning" (Coleman, 1988, pg. S109). Social capital, however, is created due to changes in the *relations among persons* that lead to action. Although Coleman states that social capital is an intangible resource (1998, p. S100), he outlines three forms in which it exists. The first depends on the trustworthiness of the social environment and the subsequent expectations and

obligations between actors within this environment. Actors within the social structure will differ in the extent of obligations held. The second form is the potential provision of information through social relations maintained for other purposes. Coleman views information as costly to acquire, but necessary for facilitating action. The third form of social capital, deemed powerful, yet potentially fragile, is due to the existence of effective norms. Norms within a group lead members to act in the interests of the group, as opposed to the self. Persons work for the public good, and are reinforced and rewarded either internally or externally, by social support, status, honour, and so forth. Coleman warns however, of the potential for this form of social capital to constrain the actions of some members and perhaps inhibit change. Furthermore, this form of altruism may not exist in a social structure that lacks "closure", where members are linked to some, but not all, other members: "Reputation cannot arise in an open structure, and collective sanctions that would ensure trustworthiness cannot be applied" (Coleman, 1988; pp. S107 - S108).

The focus of much of Coleman's work is on the relationship between social capital (as a source of parental and kin support) and scholastic achievement. Coleman gauged social capital by six indicators: parent's presence in the home; the number of additional children; the different combinations of parents and siblings; mother's expectation for child's education; movement or mobility of the family; and church attendance. He found when social capital was high - both parents are in the home, the mother expects the child to attend college, there is little family mobility, and there is religious affiliation - then drop out rates are low (Coleman, 1988). Coleman's notion of social capital has been the framework used in examining other

outcomes, such as economic success (Fukuyama, 1995) and financial behaviour (Massey and Bassem, 1992).

Coleman's contributions, however insightful, are not without their shortcomings. First, even though his ideas are sociological in nature, he relies quite heavily on the rational choice theory of economics. This neoclassical view is based on a vision of humans as rational calculators looking for every opportunity to increase their wealth and incomes. Moreover, this vision assumes that all people possess equal material motivations, and it ignores social relationships, such as those among different income classes.

Second, Coleman's emphasis on social structures facilitating individual rational pursuits has been criticized by sociologists (Kemper, 1994; Portes and Sensenbrenner, 1993). That is, what are the social entities that aid individual goal attainment and where do these entities come from? Also, Coleman sees social structural forces only in a positive light. He fails to recognize or acknowledge that social structures may constrain individual choice and hinder goal attainment (Portes and Sensenbrenner, 1993).

Putnam

The third approach is that of American political scientist, Robert Putnam. While Bourdieu and Coleman's analysis of social capital is grounded on relationships between actors, or between an individual actor and a group, Putnam equates social capital with the level of "civicness" in communities. That is, Bourdieu and Coleman

see the benefits of social capital accruing to individuals, while Putnam sees them accruing to communities. In Putnam's approach social capital "refers to features of social organization, such as networks, norms, and trust that facilitate co-ordination and co-operation for mutual benefit" (Putnam, 1995; p.66). Specifically, the ensuing community cohesion is due to:

- *civic identity*: a sense of belonging to the local community, along with a sense of solidarity and equality with fellow community members;
- *trust* of fellow community members;
- *reciprocal help and support*;
- *civic engagement*: high levels of community participation in various voluntary associations (Putnam, 1993).

Putnam's work on social capital started in 1970 when Italy created local governments in its 20 regions and turned over to them many of the central government functions, including urban affairs, agriculture, housing, hospitals, health services, public works, and so forth. This major change in governance provided a unique opportunity to study the conditions necessary for successful and effective democratic institutions. Given the diverse social, economic, cultural, and political circumstances in the country, Putnam saw the development of these new organisations as analogous to "identical seeds sown in different plots" (Putnam, 1993, p. 7).

Using a variety of qualitative and quantitative methods, Putnam examined how institutions shape politics, how they are shaped by history, and how they perform

within a specific social context. Specifically, he aimed to evaluate government responsiveness to it constituents and its efficiency in conducting the public's business.

To measure effective governance, Putnam used 12 indicators to evaluate (1) policy processes and internal operations; (2) policy pronouncements; and (3) policy implementation. For the first, he examined cabinet stability (the number of different cabinets installed in each region during the 1975-80 and 1980-85 legislative periods); budget promptness (how close a region came to implementing their budget on the target date of 1st January, the start of the fiscal year); and statistical and information services (each region's breadth of statistical and information facilities).

To investigate policy pronouncement, Putnam used two measures - reform legislation and legislative innovation. The former comprised three criteria of evaluation: comprehensiveness, coherence, and creativeness of legislation, with the 20 regions scoring between one and five for each. Putnam measured legislative innovation by how soon a region adopted a "model law" in 12 diverse areas, such as air and water pollution, consumer protection, strip mining regulation, and mental health care. He allocated a score of 100 for pioneering a law, and zero if a region had not adopted the law at all. Intermediate scores were allocated accordingly.

In gauging a region's capacity to carry out policy, Putnam looked at the regional uptake of centrally-offered opportunities for day care centres, family clinics, industrial policy instruments, agricultural spending capacity, local health unit expenditures, and housing and urban development. He also assessed bureaucratic

responsiveness by requesting information on three specific (but fictitious) problems and evaluating the replies for promptness, clarity, and comprehensiveness. This experiment involved initial requests by mail, and where necessary, follow-up telephone calls and personal visits.

Putnam's main finding was that regional governments in northern Italy outperformed the ones in the south. He attributed this success to the tendency of northern residents to form small-scale associations, which in turn created favourable conditions for political and economic development. Many of these associations were neither political nor economic in nature, and even included soccer clubs and singing groups. Whatever the nature of these associations, Putnam postulated that they generated "horizontal bonds", which in turn fostered a sense of mutual trust among community members. In contrast, the southern system was typified by what Putnam called "vertical bonds", i.e., it was rigidly hierarchical and "engagement in social and cultural associations [was] meager" (1993, p. 115).

To explore empirically whether the success of democratic governance depended on the "civicness"[ii] of regional life, Putnam examined electoral candidate preference voting[iii], referenda turnout, newspaper readership, and the extent of associational membership. Because the four indicators were highly correlated, he combined them into a single "Civic Community Index" which correlated extremely well with the measures of effective governance. Putnam concluded that the index explained effective governance better than socio-economic modernity or social and political strife. In other words, networks of organized reciprocity and civic solidarity are necessary preconditions for effective governance and socio-economic

modernization. However, it is important to note the generalisability, or lack thereof, of Putnam's findings since they were found in an ethnically and religiously homogenous society at a certain point in time.

Applying Social Capital

Putnam has since applied his notion of social capital to the US. Citing figures that show declining levels of voting and membership in organisations, he argues that America's stock of social capital is falling, resulting in a myriad of social ills and diminished quality of public life (Putnam 1993, 1995). The main reason for this state of affairs, according to Putnam, is the privatisation of leisure time due to television viewing (Putnam, 1996). Data from US General Social Surveys and National Election studies reveal a long "civic" generation with people born between 1910 and 1940 substantially more engaged in community affairs and more trusting than people born after this period. Putnam cites the rapid diffusion of television across America starting in the 1950s, culminating in current trends of "multiple television set" ownership and average viewing of four hours per day, as the basis for social capital decline. He found, after controlling for education, income, age, race, place of residence, work status, and gender, that television viewing is strongly and negatively related to social trust and group membership. Indeed, "TV watching comes at the expense of nearly every social activity outside the home, especially social gatherings and informal conversations" (Putnam, 1998, p. 15).

There is, however, no consensus on whether, as Putnam proposes, US social capital is declining (Paxton, 1999). Paxton (1999) traces this lack of consensus to three issues. First, there is a large gap between the concept of social capital and its

measurement, with previous studies providing little rationale of how their measures of social capital connect to the theoretical definition of the term. Second, many previous assessments of social capital have relied on single indicators. Finally, many of these studies have focused only on the change in level or amount of social capital over time, but not on its dispersion. That is, no one has really examined whether there is a relative inequality in social capital. Until there is a marriage of theory and practice it will be difficult to ascertain whether social capital has increased or decreased, or whether its allocation is equitable or not.

Bourdieu, Coleman, and Putnam: Comparison and Contrast

This section and Table 2.1 compare the three views of social capital reviewed above. The summary focuses first on Bourdieu and Coleman since both view the benefits of social capital as accruing to individuals, rather than to communities and groups, which is more central to Putnam's concept of social capital. For this reason, Putnam's notion of social capital will provide the framework of analysis for this research. That is, individual level data will be collected but then aggregated for analysis, the details of which can be found in Chapter 4.

Although Bourdieu and Coleman's views of social capital contain some parallels, their broader theoretical frameworks are quite divergent. First, both recognize that social capital resides neither within any member of a social network, nor within the material goods held by the members, either individually or collectively. Rather, social capital is produced by and contained in *social relationships*.

This is where the similarity ends, however, as Coleman bases his notion of social capital on the rational theory of economics, of which Bourdieu is critical (Bourdieu

and Wacquant, 1992). Instead, Bourdieu sees capital being distributed in a world where constraints exist, everything is not equally possible or impossible, and each person does not have equal chance and opportunity (Bourdieu, 1985). In fact, the dominant holders of capital tend to disguise transmission of its various forms in order to keep it within their own social class or order. Coleman, however, imports the principle of rational action, where "each actor has control over certain resources and interests in certain resources and events..." (1988, p. S98) Indeed, he proposes that individuals are capable of creating social capital, both within the family, and beyond to the outside community.

A second difference involves the level of analysis or size of community upon which these scholars focus. Coleman views the production of social capital as coming from informal family and community structures. Bourdieu, on the other hand, regards family and parental support as a source of cultural capital and sees the benefits of social capital coming from networks beyond the immediate family, but situated within class factions. Related to community is the scale at which each defines social capital. Coleman defines community on the basis of relationships and social networks, rather than geographically. He cites two examples: one of diamond merchants in New York and another of student activists in South Korea as groups who are linked by social or business exchanges, but not necessarily by a common geographical area or location. Bourdieu also defines networks on the basis of relationships, although he recognizes the importance of space. He feels relationships "are also partly irreducible to objective relations of proximity in physical (geographical) space..." (Bourdieu, 1985, p. 249). The proximity of network

members to one another may influence how effectively they are able to mobilize their network connections, which contribute to their holdings of social capital.

A final difference relates to social capital as a form of social control. Coleman regards social capital as a means of establishing norms and standards to which individuals should aspire, thus resulting in stable social structures. Bourdieu's theory is that social capital is one of the foundations for exclusion of some people from cultural or economic resources, thus emphasizing the power of certain individuals over others.

The most distinguishing feature of Putnam's concept of social capital, when compared to Bourdieu and Coleman, is the emphasis that it is a property of groups and nations, rather than individuals. While Bourdieu and Coleman focus on how the possession of social capital can increase an individual's status and economic well being, Putnam looks at how it can lead to effective democracy for communities and nations (Putnam, 1993). In fact, he notes that:

> "Much hard evidence has accumulated that civic engagement and social connectedness are practical preconditions for better schools, safer streets, faster economic growth, more effective government, and even healthier and longer lives" (Putnam, 1998, p. v).

All three theorists are alike in that each assumes that social norms exist, but differ in their views of the outcomes of these norms. According to Bourdieu, they lead to the power of one individual or sub-group over another, while Coleman sees social norms resulting in greater human capital for an individual, and therefore an increase in their

socio-economic position (Wall, 1998). In Putnam's (1993) opinion, effective and responsive democratic institutions are the end result of social norms.

Convergence and divergence are also apparent in the indicators used for gauging social capital. Bourdieu, Coleman, and Putnam all rely to some extent on memberships in organisations or social networks, but differ in the specific indicators used to signify membership. Bourdieu used individuals' titles and names, such as titles of nobility, family names, or affiliation with an education institution. Coleman used family characteristics including the number of children in the family and whether one or both parents were at home with the children. Putnam used voting participation, newspaper readership, and associational involvement. Inconsistency in the means of measuring social capital is a continuing problem, even when researchers only attempt to take on board the views of one of these three theorists.

TABLE 2.1: A COMPARISON OF SOCIAL CAPITAL ACCORDING TO BOURDIEU, COLEMAN, AND PUTNAM

	DEFINITION OF SOCIAL CAPITAL	LEVEL OF ANALYSIS	VALUES AND ASSUMPTIONS	INDICATORS OF MEASUREMENT	EFFECT OF SOCIAL CAPITAL
Bourdieu	"the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance or recognition" (Bourdieu, 1985, p. 248)	• individual/class faction • benefits accrue to individual	• social networks are not a given and must be deliberately constructed • social, cultural, and economic capital are interchangeable	• titles/names • friendships/associations • memberships • citizenship	• economic prosperity • scholastic achievement
Coleman	"a variety of entities with two elements in common: they all consist of some aspect of social structures, and they facilitate certain action of actors - whether persons or corporate actors - within the structure" (Coleman, 1988, p. S98)	• family/community • benefits accrue to individual	• social capital is a public good, although it benefits members in closed networks • social capital inheres in the structure of relationships, not in the individuals themselves • a given form of social capital that is valuable for some, may be useless or even harmful for others	• family size • parents' presence in the home • mother's expectation of child's education • family mobility • church affiliation	• scholastic achievement • children's' emotional adjustment and personality development
Putnam	"features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating co-ordinated actions" (Putnam, 1993, p. 167)	• community, region, or nation • benefits accrue to community	• responsibility for the creation/demise of social capital lies with the masses, not corporate or government establishment	• memberships in voluntary organizations • voting participation • newspaper readership	• effective democratic governance

Issues in Understanding and Measuring Social Capital

In addition to Putnam's work on the relationship between social capital and effective governance, the empirical literature includes applications of the concept as a predictor of neighbourhood stability (Temkin and Rohe, 1998), crime levels (Sampson *et al.*, 1997; Kennedy *et al.*, 1998), economic growth (Woolcock, 1998), and mortality rates (Kawachi *et al.*, 1997). The rapid diffusion and widespread use of the concept in policy applications and academic research have resulted in a myriad of meanings and interpretations. Without studying it further and developing valid and reliable means of measuring it, social capital runs the risk of becoming a meaningless cliché and losing any ground it has gained thus far as a useful concept. For instance, what exactly is the nature of social capital? That is, are some of Putnam's constructs more important than others in producing social capital? Several issues require examination and consideration.

First, there is no consensus on how to measure social capital, even for Putnam. He combined newspaper readership figures, voter turnout, the number of voluntary associations, and electoral candidate preference voting into an index to measure social capital in Italy (Putnam, 1993). His view that social capital is declining in the US is based on lower voter turnout, church attendance, union membership, and participation in voluntary organisations, such as the Boy Scouts, the Elks, the Red Cross, and the League of Women Voters. However, many of these voluntary organisations are quite traditional, are specific to Western society, and are perhaps a poor reflection of contemporary social capital. Several authors have criticised Putnam for being out of date and too selective in his choice of organisations (Lemann, 1996; Pollit, 1996). Understandably, Putnam would have had to use

different measures in the US than those he used in Italy given the lack of comparable data. Indeed, it is questionable whether it is possible to have a single measure applicable to all countries, and perhaps more likely that historically and geographically specific measures are needed. A more recent criticism is that social capital theorists fail to account for gender dynamics when looking at the generation of social capital (Lowndes, 2000). This is surprising, since Hall (2000) reveals that women's memberships in association increased by 127 per cent from 1959 to 1990, while men's grew by only seven per cent during this same time period.

Furthermore, Putnam himself has pointed to the counter-trends of the growth in mass-membership organisations in America (e.g., environmental organisations, feminist groups) and the rapid expansion in "support groups". However, he views the former as fundamentally different from traditional civic organisations in that they lack "social connectedness" - members are unaware of each others' existence and therefore the groups do little to increase mutual trust, a key component of social capital (Putnam, 1995). Support groups, while an important form of social capital, also do not play the same role as traditional civic organisations. As Wuthnow (1994) points out, they simply provide opportunities for individuals to focus only on themselves in the presence of others, and the obligation to attend or participate in meetings is generally quite weak. Even with the counter-trends of mass-membership organisations and support groups, Putnam stresses that the US General Social Survey reveals that:

> "at *all* educational (and hence social) levels of American society, and counting *all* sorts of group memberships, *the average number of*

associational memberships has fallen by about a fourth over the last quarter-century" (Putnam, 1995, p. 71).

In fact, between 1962 and 1988 even though the number of voluntary associations roughly tripled, average membership is about one-tenth as large (Putnam, 2000). That is, there are more groups but most of them are much smaller than organisations of the past.

Researchers have used a variety of indicators to measure social capital, while others have modified its original dimensions. For example, in their examination of neighbourhood stability, Temkin and Rohe (1998) describe socio-cultural milieu as a construct that goes beyond measuring trust and that is operationalised with a variety of measures of neighbouring activity, including borrowing items, visiting, and providing help. Additionally, institutional infrastructure represents civic engagement, and includes voting activity of neighbourhood residents, their level of volunteerism, and the presence of neighbourhood organisations. In relating levels of crime and social capital, Kennedy *et al.*(1997) measured the latter by the weighted responses to two items from the United States General Social Survey. First, the per capita density of membership in voluntary groups in each state; and second, the level of social trust, as gauged by the proportion of residents in each state who believed that "most people would take advantage of you if they got the chance".

Despite the myriad of methods to gauge social capita, Lochner and colleagues (1999) note that there is almost "universal agreement that community characteristics ought to be distinguished from individual characteristics, and measured at the community level. Determining the relevant unit of aggregation raises other issues however, since

the processes determining the causes and results of social capital will differ accordingly. There is thus a need for further theoretical and empirical work on the forces influencing the production and effects of social capital at various levels of aggregation.

The second issue to consider is the implicit consensus that social capital is wholly beneficial and without negative outcomes. Many scholars have questioned whether this is unequivocally so. For instance, the solidarity of some groups can lead to the exclusion of others (Briggs, 1997; Kaplan, 1997; Portes and Landolt, 1996); Briggs goes so far as to state, "exclusion is almost inevitable wherever a group is particularly cohesive" (p.4). Also, membership in a community often brings demands of conformity (Portes and Landolt, 1996), a situation that could potentially cut members off from the benefits of wider social contacts.

There may be instances where social capital and social networks exist, but instead of creating benefits, they exert downward pressure on those involved, or benefit members while harming others. Examples include youth gangs, prostitution rings, and Mafia families (Briggs, 1997; Portes and Landolt, 1996). In situations where poverty leads to gang membership or prostitution, considerable social capital may exist, but it may not provide the assets necessary to rise above the adverse circumstances. These may be situations where the source of social capital is what Portes and Sensenbrenner (1993) call "enforceable trust". In these circumstances, individuals behave according to expectations not so much out of altruism, but out of fear of punishment or in anticipation of rewards.

One may question however, whether groups such as gangs or the Mafia actually produce and possess social capital. The answer is no if social capital is conceptualised as having a property of "non-excludability" (Leeder and Dominello, 1999). According to Leeder and Dominello (1999) we accumulate social trust following positive experiences with a *wide range* of other people, and that social capital is a type of social cohesion that "comprises trust of both non-familiar people and the institutions of governance" (p. 427). Putnam (2000) concurs and distinguishes between two different dimensions of social capital – bonding and bridging. The former has a very inward looking nature and reinforces exclusive identities and homogenous groups, while the latter is outward looking and encompasses people across a range of social groups. Putnam concludes that both can have positive social effects and that many groups simultaneously bond along some social dimensions and bridge across others. Bonding social capital only becomes a problem when, along with its 'in group' loyalty, it creates strong antagonism towards 'outsiders'.

Finally, and most important from a geographical perspective, we need to examine further the network patterns and spatial scales at which social capital exists. Although originally developed as a property of individuals, social capital is now commonly applied as a property of groups, nations, and communities. However, there is a paucity of research on the appropriate spatial scale to employ in various circumstances, and the types of organisations and networks that most effectively embody or generate social capital. Complicating matters is the difficulty in defining community[iv], with most recent work on social capital relying on administrative definitions of geographic areas, rather than meaningfully defined spaces and places.

Objectification of the term "community" is questionable since it "is defined functionally, not spatially" (Lemann, 1996, p.7). For example, since 1974 the proportion of Americans who socialize with their neighbours more than once a year has steadily declined, while socializing with friends who live outside one's neighbourhood has increased (Putnam, 1995) illustrating a spatial modification of community. Presumably, the manner and spatial scale of social capital may very well be changing given the advances in transportation and communication technologies and the increased influence of the workplace on people's lives. However, the decision to use a particular spatial scale to study social capital may be dictated by the scale at which data are available.

There have been some attempts at providing empirical evidence to support these critiques or explain *how* or *why* social capital works. These include the work of Brehm and Rahn (1997), Verba *et al.* (1997), Briggs (1998), Campbell and Wood (1998), and Stolle and Rochon (1998).

Brehm and Rahn hypothesized that citizens' cognitive abilities, economic resources, general life satisfaction, and involvement with their communities could explain variations in social capital (1997). After analysing results from pooled General Social Surveys (1972-1994), they found support for their theory that when society's rewards become inequitably distributed, people may begin to feel exploited by others, thus diminishing their faith in their fellow citizens. That is, education had the strongest effect on predicting civic participation, followed by real family income. They also found that people who are more satisfied with life are more trusting, and

overall that there is a tight reciprocal relationship between civic engagement and interpersonal trust.

The Citizen Participation Study, based on survey responses of a representative sample of over 15,000 individuals and in-depth interviews with part of the sample, provides insight into the degree of inequality of civic participation in America (Verba *et al.*, 1995). Verba *et al.*, (1995) found that participation is very unequally distributed, with a bias toward the well educated and those with higher incomes. Focusing on political activity, they discovered that those at the top of the income hierarchy produce more than their disproportionate share of votes, campaign hours, contacts, protests, and campaign dollars. Furthermore, the more disadvantaged participants focus on "basic human needs" issues such as poverty, jobs, housing, and health; while the more advantaged take on economic issues like taxes, government spending, or the budget, or social issues such as abortion or pornography. Verba *et al.* (1995) conclude that public officials thus hear much less about the human needs issues facing a large segment of society, than the concerns of a smaller group of advantaged participants. The authors see little chance of improving representativeness in participation unless the inequalities of education and income in America are reduced.

Briggs has examined two dimensions of social capital – *social support* and *social leverage*, and how accessible they are to individuals (1998). He defines social support as social capital that helps one "get by" or cope, and social leverage as social capital that helps one "get ahead". Although Briggs feels individuals of all backgrounds need both dimensions, social leverage may not be available in a poor

person's network of family or friends, since they are likely to be in the same opportunity structure. In other words, "if I am among the chronically poor in America, those who help me get by can sometimes do relatively little to help me get ahead" (Briggs, 1998, p. 179). A preliminary examination of a housing mobility program[v] reveals that the adolescent participants were no more cut off from social *support* (even though they had left their old neighbourhood) than the control (stayer) group, and were no more likely to report access to *leverage* (even though they were now living among higher-income residents who could potentially provide this type of social capital). Briggs found that movers were only partially integrated into their surrounding residential areas, with networks largely confined to their housing complexes and old neighbourhoods.

In their attempt to identify which traits of associations are connected to public social capital, Stolle and Rochon (1998) examined two hypotheses. First, although all associations may contribute to public social capital, not all will contribute in the same ways or to the same degree. Second, the effect of associations on public social capital will vary depending on the inclusiveness/exclusiveness of the particular association. They found that the least diverse[vi] associations were less likely to have memberships with high levels of generalized trust and community reciprocity. Furthermore, different types of social capital are found in different sectors of associations[vii].

Qualitative research may provide insight into how and at what level people create social networks and social capital. Campbell and Wood's (1998) focus groups and in-depth interviews revealed that small-scale informal networks of friends and

neighbours, ignored in Putnam's work, played a major role in individuals' experiences of community life. That these informal networks formed the basis of reciprocity and trust show that more work is needed to aid our understanding of which relationships and "communities" impact individual's lives and influence their behaviour.

Hawe and Shiell's (2000) theoretical overview of social capital and health promotion concludes that the empirical capacity to explain health patterning is relatively weak at present, and that the concept is too broad relative to more precise, alternative social constructs. They point out that "although the theorists have argued that social capital resides in the networks and not in the individuals, network analytic techniques have been used little" (p. 12). It is in this regard that geography can play a part, that is, in addressing how human interactions and the health differentials that may result from them are structured over time and place.

Kreuter *et al.* (1998) are currently in the process of creating what they hope to be a practical and valid community-level measure of social capital. Senior level personnel in a mid-western state department informally identified communities with high or low social capital according to its four constructs, i.e., trust, reciprocity, civic identity, and civic engagement. Kreuter *et al.* (1998) chose two communities with similar demographic characteristics, but different levels of social capital. The next step in the validation process is one of triangulation involving structured interviews with key informants from each community, inputs from external observers, and a content analysis of local newspapers. This attempt at validating some means of measuring social capital is significant given the inconsistency of methods to date and

the criticism aimed at the selectivity of groups and organisations included in the determination of civic engagement.

Social Capital and Health Outcomes

Although Putnam was examining effective governance and not health, his concept of social capital provides a coherent and appropriate framework for conceptualising the development of health behaviours. First, it demands that the unit of analysis is the community or group, rather than the individual. This is because social capital is produced by groups and exists in the relationships between people. Second, it reinforces the need to focus on the broader determinants of health, including social, economic, political, and geographical factors. Its inter-disciplinary approach shows the connectedness of politics, economics, place, and social interactions, which may lead to new theoretical frameworks for understanding health behaviours and outcomes. It is for these reasons that I use Putnam's concept of social capital in my attempt to understand the influences of women's smoking initiation, maintenance, and cessation.

Insights are gained from the work of Cooper *et al.* (1999) on the role of social support and social capital on health outcomes and behaviour using three British data sets (the HEA Health and Lifestyles Survey for 1992, the Health Survey of England for 1993-4, and the General Household Survey for 1994). Their measure of social capital was based on six questions about the area in which individuals lived, including if they enjoy living there, if neighbours look after one another, whether they perceive the area to be safe and to have good facilities for children, leisure, and transport. Thus, rather than being an area-level characteristic, the measure is actually

based on individual perceptions of *neighbourhood social capital*. This information was then supplemented with measures of *community activity*, *social integration* and *experience of crime and/or attack*.

In bivariate analysis, Cooper *et al.* (1999) found a consistent gradient between female smoking behaviour and neighbourhood social capital, with smoking rates nearly double for those reporting low social capital relative to those reporting very high social capital. The association between social capital and smoking was less consistent for men. After controlling for age, sex, social class, employment status and material deprivation, the likelihood of smoking for women consistently and significantly increases with decreasing levels of neighbourhood social capital. This gradient is *not* evident for men. Gendered differences in the effects of social capital were also found for stress and reporting of limiting long-term illness (LLTI). That is, results from multivariate analysis reveal an inverse significant relationship between stress and social capital, and greater odds of reporting LLTI with decreasing levels of social capital. These relationships were found for women only.

That social capital may work differently for men and women is also suggested by the work of Mitchell *et al.* (2000) on the effects of area and personal attitude to one's community on health as noted in Chapter One.

In an American study on social capital, income inequality, and mortality, Kawachi and colleagues (1997) used data from the General Social Survey to obtain a two-dimensional measure of social capital. They assessed group membership by the per capita number of groups and associations to which residents in each state belonged,

and social trust from responses to two survey items. The first item asked "Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair" and "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" For each state, the authors calculated the percentage of respondents agreeing with the first part of each statement. After adjusting for poverty[viii], they found income inequality was strongly correlated with both per capita group membership and lack of social trust. In turn, both social trust and group membership were associated with total mortality, as well as rates of death from coronary heart disease, malignant neoplasms, and infant mortality. The empirical data from this study highlight the increasing gap between the rich and poor in society, how it affects social organization, and the implications for health outcomes.

Kawachi and Kennedy (1999) theorize that the erosion of social capital may be one of the pathways through which income inequality affects health. It is hypothesized that "the widening of the social distance between the "haves" and the "have-nots" has led to latent social conflict and increasing levels of mistrust between members of society" (p.222). Eroding social capital affects health in the form of inegalitarian patterns of political participation and subsequent passage of social policies biased against the "have-nots". For example, an analysis of U.S. data revealed that states with low levels of interpersonal trust have lower voter turnout and less investment in policies that support vulnerable groups within society (Kawachi and Kennedy, 1997).

Veenstra (2000) used survey data from the Canadian province of Saskatchewan to examine the relationship between socio-demographic characteristics, social capital and self-rated health. After controlling for human capital (as measured by income and education), frequency of socialization with workmates was positively related to health overall. Attendance at religious services and participation in clubs and associations was important in predicting health status among the elderly, but not among other age groups. After controlling for income and education, however, the relationship between health and club/association participation was no longer significant.

Campbell and Wood (1998) took a qualitative approach and used focus groups and in-depth interviews in their examination of civic engagement, community networks of residents, and health behaviours in two wards of Luton, England. In seeking to identify hypotheses regarding different forms of social capital, they focused on one community with low health and one with high health[ix]; both communities had low socio-economic status. Information obtained in the interviews refuted their hypothesis that each of Putnam's dimensions of social capital - civic identity, trust, reciprocity, and civic engagement - would be higher in the high health ward. As expected, residents of the high health ward reported higher levels of trust, and friendship, leisure, and work networks extending beyond the geographical boundaries of the low health ward residents. However, they found higher levels of local identity in the low health ward. Campbell and Wood offer the explanation that insular, inward looking community networks may be less health-enhancing than extensive, outward looking ones. Furthermore, residents in both wards possessed robust systems of reciprocal help and support, and contrary to Putnam, they found

voluntary and community groups actually played a minor role in people's lives. Informal networks of neighbours, friends, and relatives emerged as playing the most important role, leading the authors to conclude that more research is needed on which network types and relationships impact on health. In addition, individuals' social identities may be influenced beyond geographically defined communities.

Lomas' search for and subsequent review of interventions to prevent heart disease, found that those aiming to increase social support and/or social cohesion fared well compared to more individual medical care approaches (Lomas, 1998). He believes these findings imply that improving public health involves changing the physical and social structure of communities in order to create social capital, developing tools for gauging impacts at the community level, and complementing the current "individualistic biomedical and economic views of the world with a social science focus on community and societal structure" (Lomas, 1998, p. 1187).

Although the concept of social capital is not mentioned by name, work by Bruhn *et al.* (1966) and Egolf *et al.* (1992) compares two communities in similar physical environments, but with significant differences in social cohesion. That is, there were marked contrasts in the numbers of and membership in clubs and associations, proportion of three-generation families living in the same house, and rate of migration out of the community. Their analysis revealed that death rates in Roseto, Pennsylvania (the socially cohesive community) were much lower than in neighbouring communities, with the rate of heart attacks about 40 percent lower than expected. This finding could not be explained by the prevalence of factors known to increase the risk of coronary disease, such as smoking, lack of exercise, and poor

diet. Bruhn and colleagues point to the social cohesiveness and ethos of egalitarianism in Roseto as the predictive forces (1966), with subsequent analysis showing an increase in myocardial infarction rates over time as social solidarity declined and socio-economic disparities rose (Egolf *et al.*, 1992).

Conclusion

For a number of reasons, Putnam's notion of social capital has gained currency in recent years with academics and policy makers alike. While viewing social capital simply as a new name for existing social processes and ideas, Portes concedes its popularity is warranted given the attention it calls to real and important societal issues (1998). Contrary to Portes, Wall and colleagues feel part of social capital's appeal is indeed due to its connection to well-established sociological theories, while offering a fresh, multi-disciplinary approach (Wall *et al.*, 1998). Social capital's widespread acceptance may also be attributed to the ease with which its meaning and significance are conveyed to lay audiences, thus encouraging the participation of community members and policy makers in social research activities (Wall *et al.*, 1998).

Despite its wide use, definition and measurement of social capital are very much at nascent stages. Further work is needed to determine whether social capital exists at different spatial levels and whether its influence changes accordingly. Researchers have examined the impacts of social capital at the level of nations, states, and neighbourhoods. More work is needed to determine whether there are other, and as yet unexplored, environments where social capital may exist for groups, such as the work place. Examination of social capital in the workplace is particularly important

given that for many people it is the environment in which they spend the majority of their waking hours. The few studies that have examined social capital in the workplace have focused on its benefits to employers and employees within the work environment only, and not whether these benefits have extended beyond the workplace (Fernandez *et al.*, 2000; James, 2000; Burt, 1998). An exception is Veenstra's (2000) examination of social capital and self-rated health status, which included some aspects of individual level elements of social capital in the work place. Determination of the existence of various spatial levels of social capital subsequently leads to the issue of whether and how the different levels overlap and interact. In this sense, a single measure of social capital may not only be unfeasible, but also undesirable. Given the widespread interest in social capital, it is vital for future research to address these issues.

2.6 Conclusion

While it is apparent that associations exist between deprivation, social capital, and health, the exact nature of the relationships and the importance of the spatial scale at which they exist is still relatively unknown. There is a need for conceptualising *how* place, social capital, and deprivation influence health. This study therefore differs from many others on health, deprivation, and social capital by examining health behaviour rather than outcomes. Mortality and morbidity are crude and late-stage indicators; focusing on behaviour that leads to sickness and death may result in greater opportunities to improve population health.

Most work on health outcomes and behaviour has been based on individual characteristics, and although geographers have contributed by incorporating place and area effects, their efforts have concentrated on residential characteristics at ward, regional, and national levels. I am interested, in addition to current and past home and neighbourhood environments, in an environment that has been virtually ignored - the work place. This interest is due, in part, to recent work on social capital that found informal, small scale associations of friends and family played a larger role in people's lives than formal voluntary groups or associations (Campbell and Wood, 1998). For people who work outside the home, the majority of waking hours are spent in the workplace, thus placing them in a community and social structure that most likely influences their behaviour in some way. Perhaps the smaller scale of the workplace is more influential than social structures at the neighbourhood, regional, or national level. In any case, as Putnam (2000, p. 91) recently noted, "we really do lack definitive evidence, one way or the other, in this area", that is, on whether the workplace has become a locus for social capital.

CHAPTER THREE - SMOKING

3.1 Introduction

The negative consequences of cigarette smoking are many and include consumption and production waste from the tobacco industry, the economic cost of medical care for smoking related disease and illness, the health effects suffered by smokers, and the health effects suffered by non-smokers from environmental tobacco smoke.

This chapter focuses on several aspects of smoking starting with its health effects, followed by its prevalence around the world, and within the UK and Scotland. This is followed by a review of measures that have attempted to reduce cigarette smoking. Since there are marked differences between men and women in smoking prevalence, health effects, reasons for taking up the habit, and ease of quitting, the chapter narrows its focus to women. Topics reviewed include the health effects of smoking unique to this group and theories of women's smoking behaviour. The focus is further narrowed and the chapter concludes with a review of female nurses' and teachers' smoking behaviour, the two groups focused upon in this study.

3.2 Health Effects of Smoking

Cigarette smoking is widely acknowledged as one of the most important causes of morbidity and premature mortality in developed countries. Epidemiological studies have linked smoking to early deaths due to coronary heart disease and lung cancer, and to higher morbidity as exhibited in chronic bronchitis, emphysema, chronic sinusitis, peptic ulcers, and arteriosclerotic heart disease (Dunn *et al.,* 1999; Spivack

et al., 1997; Doll *et al.*, 1994). It has also recently been found that smokers are four times as likely to fall ill to streptococcus pneumoniae, the bacterium which causes meningitis, blood poisoning, pneumonia, and ear infections (Nuorti *et al.*, 2000). Furthermore, recent evidence suggests that nicotine can induce a craving for alcohol (Le *et al.*, 2000), and that smoking destroys the ability of the skin to renew itself effectively, thus accelerating the ageing process (Yin *et al.*, 2000). These consequences are not surprising since cigarettes contain about 4,000 substances, most of which are toxic, including acetone, ammonia, hydrogen cyanide, arsenic, and carbon monoxide (US Department of Health and Human Services, 1989).

The health effects of smoking are not only experienced by the tobacco user, as shown by numerous studies on the effects of prenatal/postnatal and passive smoking ('second-hand' smoke). Studies of this nature reveal that maternal smoking during pregnancy is associated with premature delivery; intrauterine growth retardation; decreased birth weight, head circumference, and length; perinatal complications, including sudden infant death syndrome; and problems of neurodevelopmental impairment, attention-deficit/hyperactivity disorder, inflammatory bowel disease, and strabismus (Becker *et al.*, 1999). Furthermore, children exposed *in utero* to maternal smoking are more likely to have asthma than children exposed to environmental smoke only after birth (Gilliland *et al.*, 2001). The health consequences of prenatal smoking are especially worrying since the (now disbanded) Health Education Authority reported that between 1992 and 1997 approximately one in three British pregnant women smoke (Bolling and Owen, 1996).

Environmental tobacco smoke (ETS) represents a health threat to all individuals in the vicinity of a smoker(s), although children are especially vulnerable. This is because they breathe more air relative to body weight, are less able to complain, possess less protective immune systems, and are less able to remove themselves from exposure (Physicians for a Smoke-Free Canada, 1999). A summary of research findings from around the world (WHO, 1999) reveals that ETS is causally linked with a number of adverse health effects in children, including: lower respiratory tract infections, middle ear disease (i.e., "glue ear"), chronic respiratory symptoms, additional episodes of asthma, increased severity of asthmatic symptoms, and reduced oxygen flow to tissues. These findings are supported by recent work (Mannino *et al.*, 2001) on 5,400 US children that shows that younger children (age 4 to 6) suffered the strongest effects. ETS exposure was associated with increased risk of ever and current asthma and wheezing in this group, and increased school absence and low lung function in the 8 to 16 year age group.

ETS is also associated with Sudden Infant Death Syndrome (SIDS), acute middle ear infections (otitis media), tonsillectomy, cancers and leukaemia's in childhood, slower growth, adverse neurobehavioural effects, upper respiratory tract infections (colds and sore throats), and unfavourable cholesterol levels and initiation of arteriosclerosis (heart disease) (Becker *et al.*, 1999; Physicians for a Smoke-Free Canada, 1999; Klonoff-Cohen, 1995; Gridding *et al.*, 1994). Adults also suffer the effects of ETS with increased risk of lung cancer, heart disease, and respiratory disease (Villeneuve, 1994; Environmental Protection Agency, 1992; Glantz and Parmley, 1991; Repace and Lowrey, 1990).

3.3 Global Tobacco Use

Given the serious health consequences of smoking, the global statistics on tobacco use are quite daunting. About 1.1 billion people smoke cigarettes, with the number expected to rise to more than 1.6 billion by 2025 (The World Bank, 1999). This increase will be due to growth in the adult population, as well as to increased consumption of cigarettes.

Although smoking has declined in high-income countries over the last few decades, it is on the rise in low- and middle-income countries. These geographical differences may be explained by the stages of cigarette smoking in a population. Cavelaars *et al.* (2000) explain that smoking spreads through populations like an epidemic with four stages. In the first stage, smoking is the exception rather that the rule and mainly a habit of higher socio-economic groups. Smoking becomes more widespread in stage two with rates peaking at 50 to 80 per cent among men, with rates somewhat equal between socio-economic groups (although rates may still retain a slightly positive relationship with income). The second stage also sees adoption of the habit by women of higher socio-economic groups. Stage three is characterized by decreasing prevalence rates among men, especially those who are better off. Women reach their peak rate during this stage, with rates starting to decline at the end of the stage. Stage four is typified by slowly declining prevalence rates for both sexes, with smoking increasingly becoming a habit of the lower socio-economic groups. The United Kingdom is said to be at the end of stage three or in stage four.

3.4 Women and Smoking

3.4.1 Prevalence and Associated Factors of Female Smoking in the UK

Overall smoking prevalence in England fell substantially and rapidly during the late seventies and early eighties, with the rate of decline since then continuing at a reduced rate (Department of Health, 1998). Recent figures show that nearly one third of the British population smoke with the highest rates occurring in Scotland. This is revealed in table 3.1 which shows trends in female smoking rates in Great Britain and Scotland.

TABLE 3.1: TRENDS IN SMOKING BEHAVIOUR – PERCENTAGE OF WOMEN SMOKING FROM 1984 TO 1998

Year	1984	1986	1988	1990	1992	1994	1996	1998
Great Britain	32	31	30	29	28	26	28	26
Scotland	35	35	37	35	34	29	31	29

Source: Office for National Statistics (2000). *Living in Britain: Results from the 1998 General Household Survey.* The Stationery Office: London

However, it is worrying that the proportion of adolescent (age 11 to 15) female smokers has remained relatively unchanged in the last decade. Recent figures for Scotland reveal that 13 per cent of girls age 12 to 15 smoke, with prevalence rising to 23 per cent among those age 14 to 15 (Goddard and Higgins, 1999). Furthermore, the 1998 Scottish Health Survey reveals that approximately 50 per cent of 14 and 15-year-old girls have tried smoking compared to about 38 per cent of their male counterparts (Boreham, 2000).

Findings from the British Household Panel Survey reveal that having no educational qualifications and leaving school at age 16 or younger significantly increased the

odds of current smoking behaviour among women (Graham and Der, 1999a). Other significant influences included housing tenure (rented), not owning a car, not married or living with a partner, and being in receipt of means-tested benefits. The Survey also revealed that poor psychological health was the most powerful predictor of high daily cigarette consumption among women (Graham and Der, 1999b), with more deprived socio-economic circumstances and not being pregnant also having a significant influence.

The influence of socio-economic circumstances on smoking is reflected in the findings of the Scottish Health Survey, which reveals that women in manual social classes were more likely to report that they smoked cigarettes than those in non-manual social classes. Twenty-two per cent of women in social classes I and II smoked, compared to 49 per cent in social classes IV and V. Smoking behaviour by socio-economic group among Scottish women for two time periods are revealed in Table 3.2.

TABLE 3.2: CIGARETTE SMOKING PREVALENCE AMONG FEMALES IN SCOTLAND BY SOCIO-ECONOMIC GROUP

	1995	1998
Professional occupations	19	9
Managerial/technical occupations	24	26
Skilled occupations non-manual	35	29
Skilled occupations manual	40	36
Partly skilled occupations	47	51
Unskilled occupations	54	59

Source: The Scottish Executive (2000). *Scottish Health Survey 1998 Volume 1.* The Stationery Office: Edinburgh

The combination of social class, gender and smoking is an important determinant of health. Marang-van de Mheen and colleagues (2000) examined survival rates to age 75 of a sample of men and women representative of the west of Scotland population. Survival rates for women in disadvantaged circumstances were 46 per cent for smokers and 56 per cent for never smokers; for those in privileged circumstances,

the survival rates were 56 per cent and 70 per cent respectively. Survival rates for men in disadvantaged circumstances were 28 per cent for smokers and 44 per cent for never smokers, and 41 per cent and 62 per cent, respectively, for those in privileged circumstances.

3.4.2 Health Effects of Smoking for Women

The greater, and perhaps increasing, prevalence of smoking among young females is particularly distressing since among smokers who get lung cancer, women are nearly twice as likely as men to develop the most deadly form of the disease. A British study of 1,601 lung cancer patients revealed a significant difference between the sexes in the risk of small-cell lung cancer - the most difficult form of lung cancer to treat successfully (Royal College of Physicians Research Unit, 1998). Initially the researchers believed part of the reason for women's greater vulnerability to this type of cancer was due to the large increase in female smokers since the Second World War and their undeveloped resistance to the disease. Another possible reason put forth was that women tend to inhale differently from men, taking shorter and sharper inhalations. Finally, women may also smoke different brands of cigarettes.

Since this study, further research has shed new light on women's higher risk of small-cell lung cancer. American researchers who studied the genetic structure in lung tissue cells removed from both men and women (smokers and non) found that a gene linked to abnormal growth of lung cells is much more active in women (Shriver *et al.*, 2000). This gene (gastrin-releasing peptide receptor, or GRPR) was active in 55 per cent of the non-smoking women and about 75 per cent of the smoking

women. Among male non-smokers, the gene was not active at all and active for only 20 per cent of the male smokers.

Another recent American study (Nelson *et al.* 1999) found that a cancer-causing mutation (K-ras) is only found in smokers, and quitting smoking may not stop the disease developing. People with this mutation are four times more likely to die than other lung cancer sufferers, with the mutation three times more common in women smokers than men. The researchers believe this difference between the sexes may be due to the effect of the hormone oestrogen, which may spur the growth of tumours.

Smoking is also contributing to fatal heart attacks in over 100 British women under the age of 45 every year (Dunn *et al.*, 1991). The researchers also found that another 300 young women are suffering non-fatal heart attacks that are linked to smoking. The study concludes that if all women aged 16-44 years were able to stop smoking, approximately 400 cases of myocardial infarction per year would be prevented.

A study in the Norwegian county of Nord-Trøndelag found respiratory symptoms such as coughing, wheezing, and breathlessness were higher among women smokers than men smokers (Langhammer *et al.*, 2000). The researchers found that women also reported higher rates of asthma than men did, with the prevalence of asthma in women increasing with more cigarettes smoked. However, this correlation between rates of asthma and the number of cigarettes smoked was not found in men. The study concludes that women draw just as heavily on cigarettes as men so that, given their smaller size, women's airways are exposed to higher concentrations of dangerous substances.

Clearly, investigation into why many women start smoking is warranted in order to prevent or reduce tobacco use, and its associated effects on morbidity and mortality.

3.4.3 Theories of Women's Smoking Behaviour

Tobacco use by women is not purely a recent trend - extensive cross-cultural evidence reveals that women have smoked cigarettes, pipes, cigars, and have dipped, chewed, snuffed, and drunk tobacco in diverse cultures throughout history (Gritz, 1980). However, although cigarettes were introduced to Western countries in the mid-eighteenth century, only daring women smoked them in public and cultural norms discouraged tobacco use by women (Walsh *et al.*, 1995; Jeger, 1963).

> "Condemnation of smoking by women at the beginning of the century can be seen as part of a system of male-dominated social control, enforced through strict rules of decorum and gender-appropriate behaviour (Walsh *et al.*, 1995: p. 52).

Cigarette smoking in public for women became acceptable during World War I. Cigarette consumption by women rose rapidly in Western countries during World War II and again in the 1950s and 1960s. By the 1970s, the number of women who smoked began to decrease (Graham, 1987). Importantly, the decline in smoking has been in the higher socio-economic classes, by women classified as "light smokers", and by women over the age of 35. Smoking among younger women and teenage girls however is a persistent phenomenon in most developed countries and one that is on the increase in others.

It has been suggested that women's changing social roles and changing social values explain their increased tobacco consumption over the last half-century (Walsh *et al.*, 1995; Knopf Elkind, 1985). As women's roles expanded, restrictions on their behaviour were gradually relaxed and smoking became more socially acceptable. Amos and Haglund (2000) feel that the tobacco industry capitalized on these changing social attitudes by promoting smoking as a symbol of emancipation. In fact, they argue that "it is questionable whether smoking would have become as popular among women as it did if tobacco companies had not seized on this opportunity between the 1920s and 1930s to exploit ideas of liberation, power, and other important values for women to recruit them to the cigarette market" (pg. 4).

Earlier theorists concluded that smoking symbolized women's liberation and freedom (Soffer, 1978; Zagona and Zurcher, 1965). However, Jacobson (1981) argues that female smokers and non-smokers are equally likely to identify with the women's movement and that the trend towards the increase in women's smoking were established during World War II, prior to the popularisation of the term "liberation". In fact, she argues that cigarette smoking is far from liberating, but rather a symbol of dependence and oppression, and is an economic liability.

In the same line, Greaves' (1996) qualitative work on women and smoking brings out the tensions between smoking as liberation or dependence on cigarettes and smokers as pawns of the tobacco industry. She questions whether the smoker is in control or being controlled, an addict or a rebel, trapped in traditional role behaviour or breaking free? Greaves summarized her work by forming a theory of women's smoking:

> "Smoking may be an important means through which women control and adapt to both internal and external realities. It mediates between the world of emotions and outside circumstances. It is both a means of reacting to and/or acting upon social reality, and a significant route to self-definition". (1996, p. 107)

This is supported by recent qualitative work suggesting that women tend to think of cigarettes in terms of their psychological functions and come to rely on them for this reason (West *et al.*, 1999). In particular, women are more likely than men to say they smoke to help them cope, socialize, and keep their weight down. Women smokers feel more dependent than men on cigarettes with 61 per cent stating they would find it difficult to go a whole day without a cigarette (compared to 56 per cent of men). Furthermore, 48 per cent of female smokers reported they would be unable to cope without cigarettes compared with only 35 per cent of male smokers ($p<.05$).

The relationship between weight control and smoking dates back to the mid 1920s when George Washington Hill, president of the American Tobacco Company, conceived the advertising slogan, "Reach for a Lucky instead of a sweet". The idea that smoking is an effective means of staying slim is one that has perpetuated to this day. Many recent studies suggest that concerns about body weight and dieting are related to smoking initiation among adolescent girls, with several studies suggesting that female smokers are often concerned about gaining weight if they give up the habit (US Department of Health and Human Services, 2001).

Through over 50 in-depth individual interviews, Laurier and others (2000) found that smokers perceive real, everyday benefits to smoking, particularly in the daily reproduction of identity and the marking out of transitions in people's life courses. For example, the British actress Kate Winslet reported that the reason she started smoking again following her pregnancy was that "it was the only way that she felt she could reclaim her body for herself after her baby" (White, 2001; p. 29). Many contextual issues, including employment, class position, family and mental health, influence the smoking behaviour itself. In fact, "...smoking cannot be treated as an isolated addiction, it is a connective habit. The enjoyment of a cigarette can be derived as much from embodying a context as from the physiological satisfaction of a craving" (Laurier *et al.*, 2000, p. 304-305).

Novo and colleagues (2000) reiterate this point with their findings of the strong association between unemployment, motherhood, and poor financial circumstances for women in Sweden. They theorize that women in this position perceive a cigarette as a reward and that stopping for a cigarette enables them to establish a private space away from a life dedicated to the needs of others. In fact, Greaves (1996; p. 66) notes "women describe valuing smoking because of their ability to completely control the cigarette. While insignificant to some, this capacity is important when women are deprived of tangible control over other aspects of their environment".

Hilary Graham drew similar conclusions from her research on smoking behaviour among women with low income. She found that smoking might be one way that women, especially single mothers with little support, cope with their difficult circumstances (1993). The accounts given by women in Graham's (1993) qualitative

research suggest that smoking is structured into their daily lives and social relationships, and that it provides a short break from chronic hardship, constant demands and physical exhaustion. These women viewed cigarettes as a readily accessible resource in times of stress and the time to smoke as an anticipated break.

3.4.4 Female Smoking Initiation During Adolescence

Some of the research in this area has been grounded in theory, while other studies have been more empirical in nature. Theoretical bases that have been used to understand adolescent smoking initiation include the rational approach theory, social learning theory, social norms and attitudes, and the developmentally oriented approach. A comprehensive review of studies employing these theories concluded that all have found support to some degree, thus no one is a superior model that can be used to explain smoking initiation during adolescence (Tyas and Pederson, 1998). It is clear, however, that male and female adolescent smokers take up the habit for very different reasons, as will be shown in the following review.

Empirical studies have examined the association of sociodemographic, environmental, behavioural and personal variables with smoking initiation amongst adolescent girls. A recent national survey in England (Goddard and Higgins, 2000) reveals that, in their own minds, the reason for first trying smoking is quite simplistic with 77 per cent of adolescent girls stating they just "wanted to see what it was like". Individual choices are however, knowingly and unknowingly, influenced by forces external to the self. That is, one must examine the sociodemographic and environmental factors that prompt many girls to "see what smoking is like".

A recent American study found that teenage girls who diet are four times more likely to smoke than those who do not, with no such relationship for teenage boys (Austin and Gortmaker, 2001). Studies in other countries have similarly found that teenage girls smoke cigarettes in an attempt to stay thin (Crisp *et al.*, 1999; Ryan *et al.*, 1998; Halek *et al.* 1993). Many young women who are biologically normal in terms of body weight and shape nevertheless worry about weight gain and thus attempt to curb it in several ways, including smoking. Several North American and European studies (cited in Crisp *et al.*, 1999) reveal that nearly half of 16 to 17 year old girls have been shown to have such concerns.

Other studies have focused on the influence of parents' own smoking/non-smoking behaviour, their attitude to the habit in general, and their relationship with the adolescent. Simons-Morton and colleagues (1999) found that girls who viewed their parents as quite knowledgeable regarding their school life and personal problems were less likely to smoke than girls who felt the opposite. Likewise, good communication with parents and their provision of support appears to significantly reduce girls' chances of smoking (Simantov *et al.*, 2000; Tyas and Pederson, 1998). Furthermore, a study of nearly 8000 British students age 15 to 16 reveals that girls living with both parents were significantly less likely to smoke than those in single parent or parentless households (Miller, 1997). Many girls who do smoke maintain the habit to relax and reduce stress, often in response to difficult family situations (Simantov, 2000; Nichter *et al.*, 1997; Crisp *et al.*, 1999), as well as in response to situations of a social or academic nature.

Although the findings on parental smoking behaviour as an influence have been inconsistent, more than twice as many studies report an increased risk of female adolescent smoking with parental smoking than those finding no significant association (Tyas and Pederson, 1998). Increased risk has also been linked to sibling smoking, with the effect especially strong among women if they have a sister who smokes (Balding, 2000; Elkind, 1988c). O'Loughlin and colleagues (1998) found that, consistent with other studies, although smoking by family members was a strong determinant of initiation, it was less important to continued smoking. Also, it may be that parents who smoke but have a disapproving attitude toward the behaviour may decrease the risk of smoking among their children (Flay *et al.*, 1998; Tyas and Pederson, 1998). A striking feature is that influences of home life and relationship with parents tend to be stronger for girls than boys in predicting smoking behaviour (Flay *et al.*, 1998; Miller, 1997), and more girls than boys smoke in order to relieve the stress of negative life events (Simantov, 2000).

Findings on the relationship between self-esteem and smoking have been inconclusive (Glendinning and Inglis, 1999) with few studies providing little evidence of association between smoking and social anxiety (Crisp *et al.*, 1999). In fact, Michell and Amos (1997) found that girls at the "top of the social pecking order" who exhibited an image of high self-esteem were identified as most likely to smoke. Their analysis of socio-metric and qualitative data revealed that few of the smokers had poor social skills and low self-esteem. Lucas and Lloyd (1999) measured social representations and social identities of smokers and non-smokers using questionnaires and focus groups. Their peers viewed smokers as 'fun-loving' and non-conformist, and cigarettes as a pathway to an exciting and popular lifestyle.

Michell and Amos (1997) suggest exploring the term "self-worth" instead of self-esteem in relation to smoking since the former may have more meaning regarding this behaviour.

The findings on peer smoking consistently reveal a strong association with adolescent smoking initiation and maintenance (Tyas and Pederson, 1998). Balding (2000) found that 54 per cent of year 10 (age 14 to 15) female smokers have a close friend who smokes, and Goddard and Higgins (2000) report that girls were more likely than boys to have first tried smoking with school friends. Furthermore, Flay and colleagues (1998) found that friends' approval of smoking significantly predicted experimenting and regular smoking among females, but only experimental use among males.

Smoking has also been linked to academic performance and aspirations. Those students who do well in school, have high academic aspirations, and are committed to school are less likely to smoke than those who do not possess those characteristics. As with many of the other influences of smoking behaviour, here too there appear to be gender differences. Flay and colleagues (1998) found a significant inverse relationship between school grades and likelihood of smoking for girls only. Likewise, Goddard and Higgins (2000) found that pupils who felt they would pass fewer than five of their GCSEs were more likely than other pupils to be regular smokers, and that this difference was contributed to mainly by girls.

Finally, and of particular relevance to the ideas of social capital described above, is the relationship of participation in extracurricular activities to smoking behaviour.

Several studies have noted the protective effects of participating in groups and associations, with greater participation being equated with lower odds of smoking (Miller, 1997; Elkind, 1988c). After analysing data from 1989 to 1992, Jessor and colleagues found that greater religious involvement and participation in school clubs and volunteer activities were key protective factors against smoking. Goddard and Higgins (2000) found that non-smokers were more likely to participated in extracurricular activities, and also more likely to play sports outside of lesson time.

It is clear that future research and policy development regarding adolescent smoking needs to consider a wide range of variables, such as social, personal, economic, environmental, and physiological. Furthermore, since smoking probably serves different functions for males and females, as revealed by the differences in associations with the myriad of variables presented here, future research must keep in mind the importance of gender in the initiation, maintenance, and cessation of this habit among both adolescents and adults.

3.4.5 Women's Smoking Cessation

Just as smoking behaviour varies according to gender, socio-economic circumstances, and education levels, so does cessation of the habit. Unfortunately, few evaluations of smoking cessation interventions take these factors into account as revealed by a recent review on the effectiveness of such interventions (Lancaster *et al.*, 2000). This is unfortunate since the following review shows that there are very real differences in smoking behaviour and cessation between the sexes and according to social and economic circumstances.

Many individual characteristics predict smoking and cessation. It can be argued however, that these characteristics are affected by factors in the social and economic environment of the individual. Lindstrøm *et al.* (2000) stress this argument in their examination of social participation and its role in explaining socio-economic differences in smoking cessation and its maintenance. The definition of social participation used by Lindstrøm and colleagues encompasses two of the four constructs of Putnam's (1993) approach to social capital - namely, engagement and identity. They found that men and women in non-manual employment had greater odds of being non-smokers than those in manual employment. However, the odds ratios decreased when social participation was considered. Higher levels of social participation were equated with greater odds of having quit smoking. This relation was of the same magnitude for men and women.

A mass media led antismoking campaign in Australia led to an immediate drop in smoking prevalence among males and females, but a post campaign trend was only observed for males (Pierce *et al.*, 1990). A Canadian survey found that among women who have ever smoked, 40 per cent with less than secondary schooling have ever quit compared to 69 per cent of those with a university degree (Health Canada, 1996). This disparity is greater than that found among men, where 53 per cent of ever smokers with less than secondary schooling have quit compared to 60 per cent of those with a university degree.

The majority of studies reveal that men have higher quitting rates than women (Osler *et al.*, 1999; Royce *et al.*, 1997; Ward *et al.*, 1997; Lichtenstein *et al.*, 1994), with

only a few showing women with rates equal to or greater than that of men (Jarvis, 1997; Freund *et al.*, 1992). However, even the study revealing similar cessation rates between the sexes (Jarvis, 1997) found differences of *when* men and women are likely to quit smoking. That is, women tended to stop more in early adulthood and men more in middle age.

Reasons for quitting also differ between the sexes. A Health Education Authority survey of a random sample of smokers in England found that women are more likely to want to stop smoking for the sake of their family, to save money and to avoid the smell of smoke on their person, while men are more likely to quit for the sake of their personal health and fitness (West *et al.*, 1999). Furthermore, more men than women cited workplace restrictions as a trigger for trying to quit.

The reasons behind cessation are, of course, linked to the reasons for starting and maintaining the smoking habit. Jacobson (1986) feels women are more likely to smoke when under emotional pressure, whereas men are more likely to smoke in relaxed or neutral circumstances. Women also feel more dependent on cigarettes, are more likely to think of them as their main source of pleasure, and more likely to use smoking to give them confidence in social situations (West *et al.*, 1999; ONS, 1997; Jacobson, 1986). Jacobson (1986) feels that women are coping with so many roles and tasks in their lives that there is no time or energy left for trying to quit smoking. These issues may explain why women in India are much more successful at smoking cessation than men. Mira Aghi explains that rural Indian women are more emotionally secure than women in most industrialized countries since there is no threat to their wifehood, women's work and the family are highly valued, and

husband and children will always support the wife/mother (Jacobson, 1986). This security that Indian women have in family and relationships may negate the need to smoke.

Greaves (1996) notes that health promotion and public health initiatives have not fully considered the place of gender and socio-economic circumstances in smoking behaviour. Tobacco companies on the other hand have spent much time and effort examining these issues and implementing them into their marketing strategy. Jacobson (1986) and Greaves (1996) have examined the reasons why many anti-smoking campaigns have not reduced smoking prevalence among women. First, campaigns that focus on not smoking while pregnant exclude most women, most of the time. Second, several campaigns from the 1970s gave men the message that quitting would benefit their health and women the message that quitting would benefit their looks. Third, many of the adverts were condemning and preachy and thus alienated several women. Generally, the value of women's health for it's own sake was not effectively transmitted.

In order to reduce smoking prevalence we need to recognize that women's smoking is a moderator of reality and then ask what is wrong with that reality that makes so many girls and women smoke (Greaves, 1996). Strategies to improve smoking cessation must consider the connections between women's smoking and social, economic and political disadvantage (Graham and Der, 1999b; Greaves, 1996; Jacobson, 1986).

The remainder of this chapter focuses on the smoking and non-smoking behaviour of female nurses and teachers, the two groups of focus in this study.

3.4.6 Smoking Behaviour of Nurses

Researchers have examined extensively the smoking behaviour of women in general, and nurses in particular, during the last few decades. The focus on nurses arose when some surveys suggested that smoking rates were higher among nurses than among comparable (according to age, sex, and income) groups in the general population. In a review of surveys from 21 countries, Adriaanse and colleagues (1991) found that only in two countries did female nurses smoke clearly less than the population at large, with a recent survey of Japanese nurses revealing considerably higher rates of smoking among this group compared to the general female population (Ohida *et al.*, 1999). While smoking rates of female nurses may now be closer to the overall rate amongst the general female population, there is a lack of any recent large-scale surveys of smoking prevalence of UK nurses (Strobl and Latter, 1998; Rowe and Clark, 2000a). In fact, New Zealand is the only country in the world to include questions on smoking in its population census (Hay, 1998). Since the New Zealand census includes information about smoking behaviour of occupation groups, trends in smoking among nurses can be examined for time periods starting from 1966. For instance, smoking among female nurses in New Zealand fell from 31% in 1981 to 18% in 1996. However, as noted, there is a paucity of accurate information about the incidence of smoking amongst qualified nurses in the UK, with studies of nurse's smoking not keeping pace with studies of the general population. Furthermore, there is little research on the smoking rates of nurses in Scotland and what does exist

suggests smoking rates have *not* fallen in relation to rates among the general population of women (Jones, 1985).

Even if the rate of smoking among nurses is comparable to, or lower than, that of the general population, other reasons warrant investigation into why nurses smoke and how smoking cessation among this occupational group can be achieved. In addition to the concern for their personal health, their role as health providers and educators is another key argument for reducing tobacco use among nurses. Nursing requires direct interaction with patients - indeed, nurses have more sustained contact with patients and clients than any other group of health professionals (Soeken *et al*, 1989) - and their use of tobacco influences the care they provide. That is, nurses who smoke tend to be less convinced of the hazards of smoking, and subsequently less likely to advise patients about smoking cessation (O'Conner and Harrison, 1992), and less likely to agree that nurses should set an example of positive health behaviour (Doré and Hoey, 1988). Nagle *et al.* (1999) found that nurses who smoked were perceived to be less effective smoking cessation advocates by their peers than non-smoking nurses.

Whether or not an individual smokes at any one time will depend on factors leading to initiation of smoking as well as factors that maintain it. For the majority of nurses, the habit begins prior to formal training. Several studies reveal that between 80 and 90 percent of student nurses who smoke started before entering training (Carmichael and Cockcroft, 1990; O'Conner and Harrison, 1992; West and Hargreaves, 1995). Doré and Hoey (1988) found that the average age of smoking initiation for Quebec nurses was 17 years, while Hope *et al.'s* (1998) examination of qualified and student

nurses in Ireland reveals that over 20 percent of the student nurses started smoking before the age of 14. Clearly then, it is vital to consider childhood/adolescence, as well as current, circumstances and environments that may contribute to the decision of whether or not to smoke. This is especially true since most studies on nurses' smoking behaviour examine the *factors associated with* current tobacco use, rather than the *reasons given* for initiating use.

The most common reasons for smoking initiation among nurses have a social theme and include having friends who smoke, peer pressure, living with smokers, and to be sociable (O'Conner and Harrison, 1992; Carmichael and Cockcroft, 1990). Other reasons include stress management, wanting to appear mature, rebelliousness, weight control, and enjoyment. Likewise, the perceived barriers to quitting include difficulty in breaking the habit, loss of enjoyment, an inability to deal with stress, and fear of weight gain (Hope *et al.*, 1998). Furthermore, motivation for smoking cessation arises from it being unattractive, addictive, and expensive, as well as causing disabling diseases (Carmichael and Cockcroft, 1990).

In addition to the few studies on reasons why nurses start smoking, is the vast literature on factors associated with current smoking behaviour. The latter reveals that lower levels of education generally correspond with higher rates of smoking amongst nurses. For instance, two studies found that licensed practical nurses are more likely to smoke than registered nurses (Nelson *et al.*, 1994; Ohida *et al.*, 1999) and another that smoking was more prevalent among Canadian nurses who held diplomas in nursing compared to those whose highest education was a Baccalaureate, Masters, or Doctorate degree (O'Conner and Harrison, 1992).

Smoking is also linked to marital status, with the habit significantly more prevalent for those with broken marriages. Married nurses are least likely to smoke, while those who are widowed, separated, or divorced are more likely to smoke (Doré and Hoey, 1988; O'Conner and Harrison, 1992; Hay, 1998). A study of Quebec nurses reveals that rates of smoking for single nurses fall between those who are married and those from broken marriages (Doré and Hoey, 1988), while an analysis of New Zealand census data shows the highest rates of smoking for those nurses partnered in same-sex relationships (Hay, 1998).

Hours of work and nursing speciality correspond to varying patterns of smoking behaviour among nurses. O'Conner and Harrison (1992) found that registered nurses' smoking rates were significantly higher for those who worked on permanent night or rotating shifts, and Trinkoff and Storr (1998) found that smoking was more prevalent among night shift workers and those working several weekends per month. Research also shows that midwives and nurses who work with children typically have very low rates of smoking (<10 percent) (Sacker, 1990; Hay, 1998), psychiatric nurses have fairly high rates at 26 to 31 per cent (Doré and Hoey, 1988; Hay, 1998; Ohida *et al.*, 1999), and nurses in public health, outpatient, or administrative positions have rates somewhere in between (Doré and Hoey, 1988; Hay, 1998). Similarly, Adriaanse and colleagues' (1991) extensive review reveals that being in control of the work setting is an essential variable, with community nurses having more personal control over their work, and thus reporting lower stress and lower smoking prevalence than hospital-based nurses.

Recent reports on the relationship between work-related stress and smoking are inconclusive. Hope and colleague's (1998) comparison of smoking and non-smoking hospital nurses resulted in both groups reporting similar levels of stress, and a study of qualified nurses by Plant *et al.* (1992) revealed that while stress was associated with alcohol use, it was not associated with smoking. However, an examination of the smoking behaviour of US military nurses showed that current smokers reported significantly more job stress and job dissatisfaction than those who had never smoked (Alexander and Beck, 1990). Furthermore, Ohida and colleagues (1999) found that smoking was much higher (30.2%) among nurses not satisfied with their career choice than those who were (17.3%).

Reviews by Padula (1992) and Adriaanse *et al.* (1991) also note the inconsistency of results in studies of stress and nurses' smoking behaviour. Interestingly, although stress is given as a reason for smoking, it appears that smokers and non-smokers may not experience different levels of stress.

In conclusion, female nurse smoking usually begins prior to training when girls are in their early teens, thus the main social and physical environments that contribute to first tobacco use are those of childhood and adolescence. However, it is also apparent that elements of a nurse's current home and work environments may contribute to the maintenance or cessation of smoking behaviour. In their literature review of nurses' smoking behaviour Rowe and Clark (2000) conclude that "the experiences, perceptions and behaviour of qualified nurses and student nurses who smoke mirror those of women and young people in general and they should be explored and understood in this context" (p. 179).

3.4.7 Smoking Behaviour of Teachers

There has been very little published on the smoking rates of teachers in the UK, especially in recent years. Adriaanse and van Reek's (1987) review of teachers' smoking worldwide is now quite dated having covered the period of 1966 to 1983. Nevertheless, they found that smoking prevalence among UK teachers decreased during the early 1980s. During this time, and the late 1970s, approximately 20 to 28 per cent of female teachers smoked, about half the rate of the general female population at the time.

Later work by Elkind (1988c) found that student teachers' smoking mirrored that of women categorized as professionals such as doctors and solicitors, rather than reflecting that of other women in the junior non-manual socio-economic group to which they belonged. De Moor *et al.* (1992) also found low rates (<10 per cent) of smoking among seventh grade teachers in 23 San Diego, California schools. It is not known from this study how prevalence differed between male and female teachers. This is true of most studies on teachers' smoking since their main *raison d'etre* is to study the link between teacher and student smoking, rather than teacher's smoking *per se*. The results of these studies have been inconclusive in establishing such a link (Bewley *et al.*, 1979; Johnson *et al.*, 1985; Murray *et al.*, 1985; de Moor *et al.*, 1992).

One UK-based study used teachers as a comparison group for general practitioners and found that 15 per cent of the former smoked in 1991 (Chambers and Belcher, 1993). There was no significant difference in prevalence between males and females.

3.4.8 Smoking Among Nurses and Teachers: A Comparison

Nurses have much more often been the focus of studies on smoking behaviour than teachers. There have, however, been a few studies comparing the smoking behaviour of both. One of the earliest is that by Phillips (1969) who found that nearly 30 per cent of Canadian nurses and teachers smoked (no significant difference between the two groups), a proportion lower than that of the national average. However, heavy smoking (20 or more cigarettes/day) was more common among nurses and teachers than that of the national average of smokers. One of the limitations of this study is that there is no differentiation between female and male nurses and teachers, even though there are substantial differences in smoking status between men and women in the general population.

Other studies have compared student, rather than qualified, female nurses and teachers. Elkind's (1988a, 1988c) study of 43 student teachers and 69 learner nurses in north-west England found that nearly twice as many (33%) of nurses smoked compared to teachers (16%). She also found that nurses were less likely to view smoking as a health problem and more likely to be of working class social origin. Among all respondents, greater likelihood of smoking was associated with having a sister who smoked as opposed to a sister or sisters who didn't smoke or not having a sister at all (statistically significant for teachers only), half or more of one's friends being smokers (statistically significant for nurses only), and having a husband or boyfriend who smoked. Also, those who participated in groups or organisations with a religious or service basis were less likely to smoke (statistically significant for nurses only).

A more recent comparison of student teachers and nurses in Australia by Adams and colleagues (1994) reveals smoking rates of 45% for college student nurses, 65% for hospital student nurses, and 38% for student teachers. Among all smokers they found that having friends who smoke was the major motivating factor in starting, health reasons were the main reason for quitting (cost of cigarettes was not important), and enjoyment of smoking the main reason for maintenance of the habit.

Finally, a study of post-secondary students in Scotland found that 23% of education students smoked compared to 30% of nursing students (Engs and van Teijlingen, 1997). Nurses also smoked significantly more cigarettes per week than teachers.

3.5 Measures to Reduce Cigarette Smoking

The health consequences and wide-spread use of tobacco products have resulted in several groups, including government, health professionals, anti-smoking activists, and individuals attempting to curb tobacco use in a number of ways. This section reviews the strategies of public education, policy and legislation, industry accountability and home smoking restrictions in order to determine which are successful, and to what degree, in having an impact on reducing tobacco consumption. Furthermore, the reasons for taking up, maintaining, and quitting smoking vary between the sexes and among women. Therefore, Section 3.5 concludes with a view of whether measures to curb smoking have addressed the determinants of this behaviour.

3.5.1 Public education

The evidence for the efficacy of anti-smoking campaigns is somewhat inconclusive, with campaigns having varying degrees of success depending on their comprehensiveness, funding, duration, and "aggressiveness". Public education appears to have a greater impact in low and middle-income countries where knowledge on the health risks of smoking is not particularly widespread. New evidence on the dangers of smoking released in the 1960s and 1970s in the UK and US reduced tobacco consumption between 4 and 9 per cent, with a cumulative impact of between 15 and 30 per cent (Jha and Chaloupka, 2000).

Some evidence for the effectiveness of anti-smoking campaigns comes from comparing US states with different "intensities" of tobacco control. California's tobacco control program, implemented in 1988 and funded by a "per package" cigarette tax, supports anti-tobacco television advertisements and billboards, and community and school anti-smoking efforts. The percentage of smokers fell from 23% in 1989 to 18% in 1993, a decrease of 22% (Pierce *et al.*, 1998b). However, no further decline occurred by 1996 and youth tobacco use increased from 9% to 11%. The researchers concluded that lack of progress could have been due, in part, to funding cuts for the campaign, which saw per capita spending reduced from $3.35 (US) during the campaign's early years to $2.08 after 1993 (Pierce *et al.*, 1998a). Other reasons cited included increased tobacco industry expenditures for advertising and promotion, and industry pricing and political activities.

California had the largest and most aggressive tobacco control program in the United States, and subsequently it showed a decline in cigarette consumption that was over 50% faster than the national average (Pierce *et al.*, 1998a; Pierce *et al.*, 1998b). Massachusetts, with a similar but not as intense program as California's, saw a 15% decline in adult smoking from 1993 to 1999, compared to very little change nationally (Biener, 1999). States that were part of the American Stop Smoking Intervention Study (ASSIST) devoted more resources to tobacco control than other states, except for California and Massachusetts, and showed an aggregate 7% reduction in tobacco consumption per capita from 1993 to 1996 compared to non-ASSIST states (Manley *et al.*, 1997).

It is important to note that California's success is due to an anti-smoking program that involved much more than just public education. That is, legislation (e.g., tobacco tax) combined with a myriad of health promotion activities made their campaign have a greater impact on tobacco consumption than other states whose programs were not as broad-based.

A community anti-smoking campaign in Sydney and Melbourne in the early 1980s resulted in an immediate drop of two percentage points in smoking prevalence (Pierce *et al*, 1990). The campaign included television commercials on the health consequences of smoking followed by a telephone help-line for smokers wanting to quit, billboard and newspaper advertising, radio skits by major personalities, printed materials for distribution from physicians' offices, and school programs (including curriculum, theatre performances, rock concerts and sports activities with antismoking themes). The immediate drop in smoking prevalence was followed by a

1.5 percentage point decline per annum for males, with no further decline for women over a five-year period.

Several years later a more 'intense' national anti-smoking media campaign in Australia used a series of television spots for six months in 1997 that looked inside the bodies of smokers in their 30s. All of the advertisements provided a telephone number for smokers to call on help with quitting. Although smoking fell to its lowest rate ever at 22%, an evaluation of the campaign reports that only one in four callers continued to abstain from smoking one year later (Chapman, 1999).

McVey and Stapleton (2000) report that an anti-smoking television campaign in England was effective in reducing smoking prevalence. Prior to the campaign, 5,468 men and women (smokers and ex-smokers) were interviewed, and after 18 months, 9.8% of successfully re-interviewed smoked had stopped and 4.3% of ex-smokers had relapsed. The authors report that applying these results to a typical population of smokers and ex-smokers would reduce smoking prevalence by 1.2%. However, the authors note the lack of evidence of any intervention effects after the first phase of the TV media campaign, and that such a campaign is only one component of a smoking reduction strategy. Given that participants in the pre-testing of the campaign voiced their concerns about adverts being too critical of smokers or "preachy", and negatively portraying smokers (Health Development Agency, 2000) it is surprising that McVey and Stapleton, employees of the Health Development agency, report that most of the advertisements aimed, in part, to "show the *ridiculousness* of the smoking habit" (italics added) (McVey and Stapleton, 2000; p. 276).

In the United Kingdom, Townsend *et al.* (1994) found that men and women in lower socio-economic groups had the highest rates of smoking but were less responsive to health publicity (and the net effects of other social trends including social acceptability and restrictions in workplace and public places) than those in higher socio-economic groups. The implication here is that education may only work for the 'very educated'. As noted earlier in the chapter, smoking behaviour and the reasons for taking up and maintaining this behaviour are associated with socio-economic characteristics. It is likely then, that pubic health officials should take this into account when targeting different groups of smokers with anti-smoking programs and education if they want to be successful in their efforts.

However, in response to this study, Reid (1994) notes that the effect of mass communications seems to depend on the medium used. Health warnings carried by print media appear to have little effect on the prevalence of smoking in more deprived groups relative to the population as a whole, but these groups are much more responsive to publicity in the electronic media, particularly television (Macaskill *et al.*, 1992; Shopland *et al.*, 1991). In fact, Macaskill *et al.* (1992) found that smokers in all social classes responded equally to a series of anti-smoking television advertisements in Sydney, Australia.

Health warnings on cigarette packages can reduce smoking. A report prepared for Health Canada found a significant linear relationship between the size of the warning on cigarette packages and its influence on the decision to quit smoking (Les Études de Marché Créatec, 1999). The report states that the larger the health warning

message, the more effective it is at encouraging smokers to stop smoking, and that the messages are more effective among those contemplating quitting and those starting to smoke. Unfortunately, 'hard-core' smokers are not as strongly influenced by the warnings. Another Canadian study found that larger, stronger messages with emotion arousing pictures are more effective (Liefeld, 1999). Polish evidence reveals that 3% of male smokers and 4% of female smokers reported quitting following the introduction of strong warnings on cigarette packages (Zatonski *et al.*, 1999, as cited in Mahood, 1999). Similar evidence of the efficacy of warnings comes from Australia and South Africa (Aftab *et al.*, 1999). That is, health warnings are most effective if they are large, prominent, and contain hard-hitting and specific factual information.

Even with these successes there is evidence to suggest that smokers and those thinking of starting do not adequately understand the extent of the health consequences or the addictive nature of tobacco products. Mahood (1999) notes that while many understand that smoking is bad for them, "beyond this superficial level of awareness, knowledge levels of risk are inadequate" (p. 359). Ayanian and Cleary's (1999) nationally representative study in the US found that most smokers do not recognise or acknowledge an increased personal risk of heart disease or cancer. This was especially the case for older ($\geq$ 65 years), less educated (<high school graduate), and light (1-19 cigarettes per day) smokers. Furthermore, Weinstein's (1999a) review of smokers' risk perceptions reveals that while they tend to acknowledge that smoking increases health risks, they judge the size of these increases to be smaller and less well established than do non-smokers. He also found

that smokers minimise the personal relevance of the risks and feel they are not as likely as other smokers to become addicted or suffer adverse health effects.

It appears that the more successful mass media campaigns to reduce smoking are those that are comprehensive, community based, and backed by adequate funding and resources. Furthermore, visual mass media, including television and health warnings on cigarette packages, can also be effective. Despite these interventions however, smoking is still a health risk behaviour practised by many people.

Public education on the health risks of smoking places the onus of behaviour change upon the individual. However, "our attitudes and judgements may appear to be personal and individual but are, in fact, derived from societal viewpoints" (Jones and Moon, 1987, p. 3-4). Williams (1995) points out that the connection between individual health-related behaviour and health beliefs may not be as strong as once believed. Instead, there has been a shift to understanding action (health-related behaviour) in the context of structure (people's daily lives). A debate has subsequently ensued on whether health promotion policies should place responsibility on the individual and family, or on the social and economic factors, which are outside individual control (Blaxter, 1990). Even the best efforts of public education campaigns do not deter many people from starting to smoke or persuade others to quit, since knowledge about the consequences is only one determinant of smoking behaviour. As Weinstein (1999b) notes, "educated individuals do not always make wise decisions". (p. 15) One must also consider the many other, sometimes much more powerful, influences of emotions, personal values, and social and economic pressures on smoking behaviour. Only in this way will we develop a

better understanding of the reasons why public education may work for some, but does not work for all.

3.5.2 Policy and Legislation

Tax increase is the single most effective policy intervention to reduce the demand for tobacco. Jha and Chaloupka's (2000) review reveals, "higher tobacco prices significantly and consistently reduce tobacco use" (pg. 359). Even though smokers' demand for tobacco is inelastic, it is still strongly affected by its price, and researchers have consistently found that price increases encourage some people to stop smoking, prevent others from starting, and reduce the number of ex-smokers who resume the habit (The World Bank, 1999). Evidence indicates that young people, people from lower socio-economic groups, and those with less education are more responsive to price changes (Chaloupka *et al.*, 2000; MacKenzie *et al.*, 1994; Townsend *et al.*, 1994).

Restrictions on the sale of tobacco to minors have met with only limited success. Although most industrialised countries have laws prohibiting the sale of tobacco products to minors, compliance with these laws is quite poor (Arday *et al.*, 1997; MacKenzie *et al.*, 1994). For example, a survey of 224 pupils age 14 to 15 years in Gateshead, England found that only 2.5 per cent of students were refused sales of cigarettes in shops near their schools (Bagott *et al.*, 1998). Furthermore, in a US study Arday and colleagues (1997) found that 101 of 165 attempts by minors to purchase tobacco products were successful. They found that although legally required, only a quarter of stores posted warning signs about restrictions of tobacco to minors, and stores with these signs were no less likely to sell to minors than stores

without signs. These studies suggest that society is still quite passive about the illegality of sale of addictive tobacco products to children and teenagers.

Smoking bans are another means of attempting to curb tobacco use, as well as protect non-smokers from the effects of environmental tobacco smoke. Many countries around the world have now implemented restrictions on smoking in public places (spaces outside of the home) such as restaurants, transport facilities, and government buildings. Many workplaces have also introduced smoking bans, with Scottish figures from 1997 showing that 70% of 1,500 workplaces surveyed had a restricted smoking policy of which 37% constituted a total smoking ban (HEBS, 1997).

Such policies can significantly reduce cigarette consumption (Yurekli and Zhang, 2000). According to various estimates, restrictions have reduced tobacco consumption by 4 to 10 per cent in the US (The World Bank, 1999). However, a recent evaluation of a total smoking ban at a Scottish university revealed significant differences between staff groups' behaviour in response to the ban. While 16.0% of academic and related staff quit smoking, only 4.2% of manual staff did the same (Parry and Platt, 2000). Furthermore, 8.9% of manual staff reported smoking more following the ban compared to only 2.8% of the other staff group.

Workplace restrictions may also work to reduce smoking in the home. Borland and colleagues (1999) found that individuals whose workplace had a complete smoking ban were more likely to discourage visitors from smoking in their homes than those with partial or no smoking bans. Poland (1998) cites research indicating that most

smokers are supportive of non-smoking policies. In fact, policy success depends on a general level of support for them and an awareness of the health risks of ETS or "second-hand smoke" (Jha and Chaloupka, 2000; The World Bank, 1999). For example, the success of smoking restrictions in Canada is seen as being due to "...the social recognition of the rights of non-smokers to smoke-free air [as well as to the] tendencies in Canadian culture toward politeness, to do what is expected, and to obey the law" (Poland, 1998; p. 210). Thus strong social consensus and self-enforcement of restrictions lead to successful policies.

However, Poland cautions that this "success" may result in the stigmatisation of smokers, whereby they must continually monitor which spaces are permissive and which ones are not. He further states that smoking, as a form of deviance, results in its own distinctive geography with the stigmatised seeking each other out and congregating in the same places. He concludes that tobacco control policies may not be distributed evenly across social classes. For instance, groups of lower SES (socio-economic status) generally have less access to recreational space (private yards and gardens) and are more likely to have rented housing than those of higher SES. The former thus rely more on public spaces for a variety of functions, including social activities. Therefore, regulations on public spaces are more likely to affect them than their more privileged counterparts.

Relocation of smoking from indoors to outdoors and congregation of smokers at building entrances was one of the consequences of a total smoking ban implemented at a Scottish university in 1997 (Parry *et al.*, 2000). While Parry and colleagues found a reduction in smoking levels at work and some improvement in perceived air

quality, the ban had other, unintended, consequences associated with the relocation of smoking. These included debris from cigarette ends, a heightened perceived risk of fire, the visibility of smokers and the poor impression it gives outsiders, and the annoyance of non-smokers at having to enter and exit buildings through a group of smokers and the resulting clouds of cigarette smoke. These issues resulted in sympathy for smokers from a large number of their non-smoking colleagues, who suggested the university should assist employees in smoking cessation and/or designate an indoor smoking area in order to solve the aforementioned problems associated with smoking outdoors.

However, Parrott and colleagues (2000) found that few workplaces provide assistance with smoking cessation. A survey of Scottish workplaces, coupled with a review of literature on smoking related costs, revealed the estimated cost of smoking related absence in Scotland is £40 million per annum (absenteeism is higher among smokers than non-smokers), with total productivity losses about £450 million per annum. The researchers suggest that smoking cessation interventions in the workplace could yield positive cost savings for employers, with gains in productivity and workplace attendance outweighing the cost of any smoking cessation program.

3.5.3 Industry Accountability

Studies on the links between tobacco advertising and aggregate consumption generally reveal that prevalence increases with more advertising and decrease when advertising is banned (Economics and Operational Research Division, Department of Health, UK, 1992, as cited in MacFadyen *et al.*, 2001). However, it is only comprehensive bans on cigarette advertising and promotion that appear to reduce

smoking with more limited bans having little or no effect (Jha and Chaloupka, 2000; World Bank, 1999).

Recent government initiatives and public opinion suggest that increased bans on advertising will likely take place. A recent UK survey found that 60 per cent of people believe tobacco advertising should not be allowed at all, with 48 per cent of smokers feeling this way (Freeth, 1998). In early 2001 Scottish Members of Parliament (MPs) gave their backing to a UK-wide ban on tobacco advertising (Scottish Parliament, 2001). Scottish MPs hope the Tobacco Advertising and Promotion Bill will be in place by spring 2001 thus banning the promotion or advertising of tobacco in areas such as print, electronic media, and on billboards. It will also restrict the display of tobacco products in shops and other sales outlets. Scottish MPs will introduce new offences and set penalties for them.

The lengths to which government and individuals will go to ensure tobacco industry accountability is reflected by litigation proceedings around the world in general and the US in particular. In 1996, after 42 years of successfully evading any responsibility or payouts, the tobacco "...industry's solid phalanx cracked..." (Daynard *et al.*, 2000). That year a major US tobacco company settled with several states, agreeing to pay monetary damages, improve warnings on cigarette packages and provide testimony regarding industry misconduct in future cases.

Since then litigation has continued in the form of individual cases, class actions, and third party reimbursements, many of which have been successful for the plaintiffs. For instance, a widower was awarded US$200,000 (£142,000) in damages following

the death of his 62-year-old wife from lung and colon cancer (Charatan, 2000). A recent civil court case resulted in America's seven largest tobacco companies being held liable for compensatory and punitive damages to a group of plaintiffs (Charatan, 1999). The companies were found guilty of fraud, misrepresentation and conspiracy to conceal the addictiveness and dangers of cigarette smoking.

Tobacco litigation has now spread to several other countries around the world, including Britain. However, it has not had the same level of success experience by plaintiffs in the US for several reasons (Daynard *et al.* 2000). First, tobacco litigation has met with political opposition from the Department of Health and the Legal Aid Board. Second, the chances of large (>£100,000) punitive damages are slim thus a lengthy procedural case would drain the resources of most plaintiffs and their lawyers. Finally, "the blame the smoker argument still holds great sway" in Britain (p. 113).

3.5.4 Home Smoking Restrictions

The home is another location, in addition to the workplace and public spaces/buildings, where people may be exposed to environmental tobacco smoke and is probably the major source of exposure for children (Borland *et al.*, 1999). Health professionals and anti-smoking activists have thus urged smokers to restrict smoking in their homes in order to protect non-smokers from second-hand tobacco smoke.

A survey of home smoking restrictions in Australia found an increase in the number of people who ask visitors to smoke outside, from 27 per cent in 1989 to 53% in 1997 (Borland *et al.*, 1999). Smokers who reported always smoking outside the

home increased from 20% in 1995 to 28% in 1997, and not smoking in the presence of children rose from 14% in 1989 to 33% in 1996. As mentioned earlier in this chapter, people who worked in places with total smoking bans were more likely to ask their visitors to smoke outdoors than those with partial or no smoking bans at work. This self-regulation in the home by smokers may be due to their experience with other smoke-free environments (Borland *et al.*, 1999).

In addition to protecting non-smokers, home-smoking restrictions may promote behaviours linked to increased future cessation among the smokers. Gilpin and associates (1999) found that home smoking restrictions, along with family pressure on the smoker to quit, were highly correlated with a recent quit attempt and the intention to quit in future.

3.5.5 Conclusion

Given that cigarette smoking is one of the most important causes of morbidity and premature mortality, a myriad of measures to reduce its levels have been implemented and attempted around the world - several of which have been reviewed in this section. Most of the programs reviewed here focus on changing individual behaviour even though the behaviour is socially and culturally embedded. For instance, it is clear from Table 3.2 that smoking and cessation rates differ substantially between social classes. Therefore, to be effective anti-smoking programs need to address improving the social circumstances and settings of those most at risk of taking up or maintaining smoking (Graham and Der, 1999a; Greaves, 1996).

While detrimental to the health of both men and women, there are differences in their behaviour and outcomes as they relate to tobacco use. This study thus focuses on female smoking behaviour only with the next section reviewing its prevalence; health effects; and factors associated with its initiation, maintenance and cessation.

Conclusion

Little is known about the reasons why female teachers smoke and recent figures on smoking prevalence among both nurses and teachers are unavailable for the UK. On the other hand, it has been found that the experiences, perceptions, and behaviour of nurses mirror those of women in similar socio-economic positions and therefore their smoking should be examined in the context of their everyday lived experiences and not within the nursing environment alone (Rowe and Clark, 2000; Adriaanse *et al.*, 1991). Elkind (1988) found that smoking behaviour of student nurses was similar to other women in the junior non-manual socio-economic group but the prevalence among student teachers mirrored that of women categorized as professionals, such as doctors and solicitors. Therefore, smoking and non-smoking behaviour of nurses and teachers in particular, and all women in general, should be examined within the context of their everyday lives and the myriad of roles they play on a daily basis.

Given the serious health consequences of smoking and the low success rate of educational health promotion (Gillies, 1998), a proper understanding of when smoking is taken up and what influences the initiation and cessation decisions are essential in directing health promotion efforts and making them effective. From a geographical view, interest particularly lies in the influence of environment and place, especially as they relate to social capital and deprivation, on smoking behaviour. Finally, evidence strongly suggests that gendered differences exist in

smoking initiation, maintenance and cessation and that real sex differences exist in tobacco related health outcomes, thus the focus upon one sex group in this study.

CHAPTER FOUR - METHODS

4.1 Introduction

Following the decision to focus upon female nurses and teachers, an exploratory study was undertaken to examine their smoking behaviour in association with social capital and socio-demographic, environmental, behavioural and personal variables. This chapter provides reasons why focus groups were used in questionnaire development and why a questionnaire was seen as the best way of generating data to address the issues in question. It also details the distribution of, and response to, the questionnaire, and the subsequent data preparation and analysis. Finally, it explains the purpose and format of discussions with nurses and teachers following statistical analysis.

The two broad aims of this project (to gauge the prevalence of smoking and to understand how and why it happens) stem from a realist research tradition - an understanding of which is necessary in order to appreciate the methods chosen to address these aims. That is, "methods...take significance, and indeed meaning, from the philosophical and theoretical contexts in which they are employed" (Graham, 1999). More specifically, as outlined in Chapter One, the objectives of this project are to investigate the prevalence of smoking and non-smoking behaviour among female nurses and teachers, and to investigate which personal, social and environmental variables influenced this behaviour. In adopting a realist approach I am interested in both empirical regularity and causal mechanisms, or what Sayer (1985) termed extensive and intensive research, respectively. As outlined in the preceding paragraph, this study employs both quantitative and qualitative methods.

This multi-method approach is "tenable and viable" (McKendrick, 1999), and indeed necessary in order to answer the research questions outlined in Chapter One. The following sections detail the importance of the focus groups, questionnaire and discussion groups in obtaining the information necessary to address the research aims.

4.2 Focus Groups

A focus group is a discussion among a group of individuals for the purpose of exploring a specific issue or set of issues. "The hallmark of focus groups is their explicit use of group interaction to produce data and insights that would be less accessible without the interaction found in a group." (Morgan, 1997, p. 2). A facilitator, often the researcher, guides the discussion and probes for additional information when necessary, while participants engage in natural conversational processes.

Focus groups were originally used as a market research tool in the 1920s (Powell and Single, 1996) with researchers in the social sciences adopting the technique about 30 years later (Sim, 1998; Kitzinger, 1995). The earliest use of focus groups in the social sciences was by Robert Merton and his colleagues (1956) to examine the effects of film and television programmes, and people's reactions to wartime propaganda. More recently focus groups have featured prominently in health and health care research (Morgan and Krueger, 1993) and are a popular method for assessing health education messages and examining lay perceptions of illness and health behaviours. Kitzinger (1995, p. 311) explains this popularity, and importance, of focus groups by noting that:

"While surveys repeatedly identify gaps between health knowledge and health behaviour, only qualitative methods, such as focus groups, can actually fill these gaps and explain why these occur".

Focus groups in this research project were used as a means of identifying an appropriate domain of content for the development of a more structured questionnaire. Existing knowledge on the relationships between smoking behaviour, social capital, and deprivation was inadequate in general and for nurses and teachers in particular. Elaboration of these issues and the generation of new hypotheses were therefore necessary before a relevant and valid questionnaire could be constructed.

Therefore, the focus groups were designed to be somewhat structured in their format with the researchers asking a series of questions to guide participants. These questions focused on smoking and non-smoking behaviour, social networks and community, and occupational issues (Appendix One). After each question, participants were given as much time as necessary to answer and further discussion or comments were invited, thus allowing the participants to guide the focus group to some extent. Focus groups were kept quite simple since financial resources were not available to conduct several groups nor to hire a professional group facilitator.

Participants in focus groups share key characteristics pertinent to the study and thus it is not desirable, nor methodologically useful, to obtain a random sample of individuals from the general population. Specifically, this study focuses on the smoking and non-smoking behaviour of *female nurses* and *teachers*. Thus it would

not have made sense to have male nurses or teachers in the groups, nor to include women from occupations other than those in question.

Two focus groups were completed prior to questionnaire development: one with five teachers and one with six nurses. Teachers were recruited from Broadgate Primary School in Leeds and nurses through the Head of the Division of Nursing at the School of Healthcare Studies at the University of Leeds. In each case I met with a group of 20 to 25 individuals and explained the nature of the research project, why I felt it was necessary to conduct focus groups for the project and asked for volunteers to participate in these groups.

Each audio taped session lasted from 45 to 60 minutes and followed the same format (Appendix One). An introduction included a brief description of focus group methodology, the 'rules of the focus group', and the focus of the discussion. The five 'rules' of the focus group were:

1. We would strive to maintain an informal setting in order that group discussion would be open and in-depth.
2. I would be recording the session on audiotape in order to aid with writing up the results after the meeting.
3. Confidentiality and anonymity were assured. Participants were promised that their names would not be associated with any comments.
4. I stressed that each person's opinion was important and needed to be heard.

5. I further stressed that it was perfectly fine, in fact desirable, to agree to disagree. The purpose of the focus group was to hear as many ideas, opinions and feelings as possible and not to strive for consensus.

Each participant was asked to sign a form agreeing to the tape recording of the session with assurances that their name would not be associated with any comments written in this thesis or associated publications and reports. Participants then completed a mini-questionnaire on their knowledge of the health consequences of smoking (Appendix Two). Items regarding the financial costs and health effects of smoking and passive smoking were taken from various sources (Table 4.1) and were later used in the questionnaire. This was followed by a structured discussion on the topics of smoking and non-smoking behaviour, social networks and community, and reasons why they chose their profession.

The tape-recorded focus group sessions were transcribed and then subjected to a very descriptive thematic analysis. The data were used to indicate key issues surrounding smoking and social capital that might be particularly relevant to nurses and teachers. The results thus helped identify questions for the subsequent questionnaire survey.

4.3 The Questionnaire

The results of the focus groups were especially instrumental in designing the section on social capital in the workplace and satisfaction with one's job. Participants in the focus groups also provided insight into why and where nurses and teachers smoke, why others never smoked, and what prompted others to quit. Details of the focus

groups results appear in Chapter 5, and instances where these results influenced questionnaire design are detailed in this Section (4.3).

A 110-item questionnaire (Appendix Three) was developed, based on information gleaned from the focus groups and a review of literature and questionnaires on health behaviour, smoking, and social capital. As mentioned earlier, there is a paucity of information on the exact nature of the relationships between smoking behaviour, social capital, and deprivation. For this reason, it was necessary to generate primary data in these areas and a mail-out questionnaire was viewed as the best way of collecting information from a large number of respondents dispersed over a large geographical area (Scotland). All items in the questionnaire were close-ended in order that the data generated could be analysed quantitatively.

The questionnaire comprised eight sections that all respondents were asked to complete, and one additional section according to whether the respondent was a current smoker, an ex-smoker, or someone who had never smoked. The first eight sections were designed to gather information on household and neighbourhood characteristics (past and present), health status, social capital in the workplace and neighbourhood, tobacco use (by self and household members past and present), and knowledge on the consequences of tobacco use.

More specifically, Section A, entitled 'You and Your Household' included questions on demographics, household composition, and home and car ownership. Some of the questions (Table 4.1) were adapted from the UK Census to allow for comparison of respondents to the national population.

Section B, entitled 'Your Neighbourhood', contained several questions later used in constructing a social capital index, as well as questions on length of time in current neighbourhood, each respondent's postcode, and the name of their local neighbourhood. It was intended to link these postcodes with the Carstairs' index in order to obtain an area measure of deprivation.

Section C, entitled 'Your Background', was intended to gather information quite similar to that in the preceding two sections but at the time when the respondent was between 10 and 16 years of age. This age range was chosen since it represented the time when the majority of smokers would have taken up the habit. Sections A, B and C would provide much of the information needed to determine which, if any, individual and home/neighbourhood variables might be linked to smoking behaviour.

Section D, 'Your Health', was designed to gather information on respondents' weekly exercise and alcohol consumption, perception of their weight and the 'healthiness' of their diet, and their health status. The latter was gauged by response to a question on the presence of any limiting long-term illness and a question on whether they had ever been diagnosed with one or more conditions that may be caused or exacerbated by smoking. Practising one poor health behaviour is often linked to the practice of others (Cook and Bellis, 2001; Le *et al.*, 2000) thus responses to these questions would allow for the examination of whether smoking behaviour was linked to exercise, alcohol consumption, diet and the health outcomes outlined above.

Section E, 'Your Occupation and Workplace', comprised questions regarding the work environment and respondents' satisfaction with it. Several of the questions in this section were designed to gauge social capital in the work place and thus centred on trust, identity, engagement and reciprocity. Several of the questions in this section arose out of the focus group discussions, whereby it appeared that while teachers viewed their staff community as cohesive, they tended to socialise outside of work with non-work acquaintances and friends. Nurses, on the other hand, tended to view themselves as a cohesive group and socialised with each other outside of working hours. Thus the questions in this section were used to gauge whether a sample of nurses and teachers in Scotland would echo these views.

Section F, 'Life Outside of Work', was designed to gauge social capital outside of the work place and thus measure levels of trust, identity, engagement, and reciprocity. Several of the items were based on Putnam's notion of social capital and thus gauged trust in local and national government, whether or not respondents had voted in recent election, whether they were actively involved in various clubs or associations, and the frequency with which they read local and national papers or viewed local or national news programs on television. Two questions also asked about the frequency of socializing with work and 'non-work' friends. In the focus groups nurses had noted that they felt somewhat cut-off from their home community and neighbourhood since they worked somewhat unsociable hours or did not have the time to engage in neighbourhood activities. Thus some questions in this section (e.g., 61, 62, and 78) were intended to measure the degree of involvement in non-work related activities and engagement with non-work individuals.

The purpose of Section G, 'Consequences of Tobacco Use', was to gauge respondents' knowledge on the health effects of smoking. In particular, this information would be used for two purposes: first, to see if this knowledge had any relationship with smoking or cessation, and second, to see whether teachers and nurses would have the same level of knowledge. Furthermore, focus group participant had enjoyed completing a quiz thus it was included in the questionnaire in order to make it more interesting for respondents.

Section H, Tobacco Use in Your Household, Now and Then, asked questions on home smoking restrictions and household members who smoked, both currently and whilst growing up. Presence or absence of smoking behaviour at home, and the smoking behaviour of specific family members, can be important influences in the decision to smoke.

The final three sections of the questionnaire - I, J, K - were completed according to whether the respondent was a current smoker, an ex-smoker, or someone who had never smoked. The development of these sections was based on much of the information gleaned from the focus groups with several of the answers to the multiple response questions taken from comments made during discussions with nurses and teachers. Questions directed at smokers included those which asked how many cigarettes and how often they smoked, when they started, why they smoked, whether they have tried or want to quit - and if not, why not, whether they feel pressurised to quit and by whom, and where they tend to smoke most often. Ex-smokers were asked why they had quit, how long ago, and whether they had quit on

their own or with someone else. Those who had never smoked were asked why they had never taken up the habit.

An initial draft of the questionnaire was pre-tested by two teachers and four nurses. A revised version was reviewed by members of the School of Geography and Geosciences at the University of St Andrews and formed the basis of a discussion group. A further revision was then pre-tested by five teachers at Lawhead Primary School in St Andrews and five nurses at Adamson Hospital in Cupar. Only minor changes were made following this pre-test. The final version of the questionnaire comprises original questions and those adapted from various sources (Table 4.1).

TABLE 4.1: SURVEY QUESTIONS

SOURCE	QUESTIONS
Becker *et al.*, 1999	Section G: 84
Buck *et al.*, 1997	Section G: 81
Bullen and Onyx, 1998	Section B: 13, 15 Section C: 30, 31
Gilpin *et al.*, 1999	Section H: 86, 89
Hope *et al.*, 1998	Section I: 92, 95, 97, 98,
Peto *et al.*, 1994	Section G: 79, 82
Shriver *et al.*, 1999	Section G: 83
Strobl and Latter, 1998	Section F: 45, 47, 49
UK Census	Section A: 2 - 9 (inclusive) Section C: 22, 23, 27, 28 Section D: 37
WHO, 1999	Section G: 80
Original	***All others***

The piloting of the questionnaire aided in developing fuller response sets for the multiple questions in Sections I, J, and K which dealt with smoking and non-smoking behaviour. Interpretation of the questions did not appear to be a problem during the piloting stage, but it became obvious that some questions were viewed in different ways once questionnaires from the main survey were returned. These potential sources of bias are noted in Chapter Nine.

4.4 The Sample

In order to address the aims of this project, it was necessary to survey a random sample of female, qualified, hospital-based nurses and female teachers across Scotland. The next two sections outline the sample selection procedure.

4.4.1 Nurses

Initial contact was made with the Director of Nursing/Chief Nursing Officer of the Scottish Executive in August 1999. The Director's advice was to contact each Director of Nursing in the National Health Service (NHS) Primary Trusts. The Director provided the names and addresses of these individuals, to whom a letter (Appendix Four) was sent in October 1999. This letter provided a brief overview of the research project and asked for the number of female, qualified, hospital-based nurses employed in their NHS Trust. Replies were received to 25 of the 32 letters sent out (28 to NHS Trusts, and four to Health Boards and Community Services Units). Of the 25 responses, 22 Trusts expressed an interest in the research project, with 20 offering to distribute questionnaires.

Project funding allowed for the distribution of 1,000 questionnaires to nurses. Given varying time and resource constraints, the number of questionnaires the Trusts offered to distribute ranged from 20 to 197. Ten of the 20 Trusts offering assistance were not included in the research project due to their offer coming after the 1,000 questionnaires had been allocated. The ten participating Trusts (Table 4.2) were instructed to distribute the questionnaires to a random sample of female, qualified, hospital-based nurses. It was decided that the best way to do this would be to pick a

random sample of nurses from the payroll list and distribute questionnaires along with the payslips.

TABLE 4.2: NATIONAL HEALTH SERVICE TRUSTS PARTICIPATING IN THE RESEARCH PROJECT

TRUST NAME AND LOCATION OF HEADQUARTERS	PARTICIPATING HOSPITALS WITHIN THE TRUST
Lothian Care Primary Care NHS Trust Edinburgh	Astley Ainslie Hospital Edinburgh
West Lothian Healthcare NHS Trust Livingston	St. John's Hospital Livingston
Greater Glasgow Primary Care Trust Glasgow	Gartnavel Royal Hospital Glasgow Parkhead Hospital Glasgow
Refrewshire & Inverclyde Primary Care NHS Trust Paisley	Hawkhead Hospital Paisley
Fife Acute Hospitals NHS Trust Dunfermline	Queen Margaret Hospital Dunfermline
Fife Primary Care NHS Trust Dunfermline	Lynebank Hospital Dunfermline
Ayrshire & Arran Acute Hospital NHS Trust Ayr	The Ayr Hospital Ayr
Grampian Primary Care NHS Trust Aberdeen	Bennachie Royal Cornhill Hospital Aberdeen
Western Isles Unit Stornoway, Isle of Lewis	Western Isles Hospital Stornoway, Isle of Lewis

4.4.2 Teachers

The General Teaching Council for Scotland (GTCS) was initially contacted in June 1999 regarding assistance in distributing questionnaires to female teachers. The GTCS contains the names of all individuals entitled to teach in public sector schools in Scotland and in 1999 had approximately 75,000 names on the Register. After reviewing a research summary and a copy of the questionnaire, the Council agreed to distribute questionnaires to a random sample of 1,000 female teachers in Scotland. A random sample of 1000 names was thus taken from their database of registered teachers.

4.5 Questionnaire Distribution Procedure

In February 2000, 1,000 questionnaire packages including a cover letter, questionnaire, and a pre-paid envelope were delivered in person and by Royal Mail to be distributed by various Primary Care Trust personnel. One week after the packages were distributed a letter was sent to each contact person within the Trusts asking that a reminder be given to questionnaire recipients via a staff meeting and/or newsletter. Since funding did not allow production and posting of individual reminders this strategy was the only option.

One thousand questionnaire packages were delivered in person to the offices of the General Teaching Council for Scotland on 10 February 2000 where they were labelled and posted First Class the following day. Again, funding did not allow for individual reminders.

4.6 Response Rates

Of the 1,000 questionnaires sent to the teachers, 13 were returned as "address unknown". Responses were received from 508 of the 987 questionnaire recipients (response rate of 51%). Of the 1,000 questionnaires distributed to nurses, 21 were returned unopened due to these intended recipients being away on leave or holiday. Responses were received to 427 of the remaining 979 (response rate of 44%). Overall response rate was thus 48%.

This response rate is higher than the 30 to 40 per cent that is typical for a mail-out questionnaire (Parfitt, 1997). However, there are a number of possible reasons why several recipients, especially nurses, did not return a completed questionnaire survey.

First, nurses received their questionnaire in the workplace. In this situation, it may have been more difficult to find the time to complete the questionnaire than if one received it at home, as did the teachers. Second, some authors have found that questionnaires about smoking habits are less favourably accepted where the prevalence of smoking is higher (Zanetti *et al.*, 1998) and as will be shown later, the prevalence of smoking was significantly higher among nurses than teachers. Third, funding did not allow for the posting of individual reminders or for the provision of incentives, monetary or otherwise. Both tactics have been shown to improve response rates to postal surveys (Oppenheim, 1992). Fourth, some nurses and teachers returned late questionnaires noting that they had been on leave or on holiday. It is somewhat likely then that other nurses and teachers may have been away and either did not receive their questionnaire or decided it was too late for its completion and return. Finally, a few recipients of the teacher questionnaire telephoned to say they were retired and thus would not be participating. One can assume there may have been other retired teachers who received but did not complete the questionnaire and did not inform me of this.

4.7 Data Entry and Preparation

This section describes how the questionnaire data were coded, entered, and subjected to a process of error checks and preparation prior to analysis. For instance, certain questionnaire items were aggregated to create index composite measures of health and social capital. Furthermore, response categories for certain variables were collapsed, while some variables were linked to others from external datasets.

4.7.1 Coding the Data

All items in the questionnaire were close-ended and the majority pre-coded. However, some questions required coding prior to data entry, while others required recoding. *Question 4* (from nurses' and teachers' questionnaires) asked for the relationship of each member of the household to the respondent and these were coded as one for husband, two for partner, three for son, four for daughter, and so on. *Question 45* of the nurses' questionnaire asked for the clinical area in which each respondent worked and these were then coded as such: one for administration, two for mental health, three for learning disabilities, four for children's health, five for midwifery/obstetrics, six for adult nursing, seven for health promotion and education, and eight for health visiting. Finally, *Question 109* on both questionnaires asked those who had quit smoking with someone else to specify the relationship of that person to them. Answers were coded as one for husband, two for partner, three for friend, and four for co-worker(s).

Several items from both nurses' and teachers' questionnaires required recoding. *Question 25* asked for the respondent's postcode of the area in which they grew up. Coding was created to reflect the responses of "No postcodes at that time", "Cannot remember/Do not know", and "Confidential". *Question 70 to 77* had the options of "Don't know/too soon to comment" and "Don't wish to comment," added to existing responses. Several responses to *Questions 96 (reasons for smoking), 101 (where one smokes most often) and 107 (reasons for quitting)* required the creation of a "Checked but not ranked" code.

4.7.2 Data Entry and Error Check

Data were entered via an entry form developed with Lotus Approach 97 after which they were transferred to an SPSS V. 9 (Statistical Package for the Social Sciences) file. Data were then cleaned by running frequencies on all nominal variables to ensure that only valid responses were entered and by checking for outliers on scale variables. Logical checks were also conducted on questions where the answer of one influenced or was dependent upon the answer of another. For example, questionnaire Sections I, J and K were mutually exclusive, thus if questions were answered in one, there should have been no questions answered in the other two.

4.7.3 Collapse of Response Categories

An initial review of the questionnaire data revealed a small number of cases within response categories of some variables thus making certain statistical analyses unfeasible. It was therefore necessary to collapse these response categories (Table 4.3). Certain continuous variables were categorized according to certain criteria. First, units of alcohol consumed per week were grouped as either 'less than 14 units' or '14 or more units' per week. The consensus opinion of the Royal Colleges of Psychiatrists, Physicians and General Practitioners is that alcohol intake of less than 14 units per week poses little health risk to women. More than 14 units per week is described as hazardous drinking and is associated with intermediate or high (>35 units per week) risk of alcohol-related injuries. This limit has also been adopted for use in Scotland as identified in *Health Education in Scotland* (1995).

TABLE 4.3: ORIGINAL AND COLLAPSED CATEGORIES OF SURVEY QUESTIONS

QUESTION AND ORIGINAL RESPONSE CATEGORIES	COLLAPSED CATEGORIES
12. What age are you at present?	
Under 25	Under 35
25 to 34	35 to 44
35 to 44	45 to 54
45 to 54	55 or older
55 to 64	
65 or older	
13. What is your *present* marital status?	
Single (never married)	Single (never married)
Married (first marriage)	
Re-married	Married
Divorced (decree absolute)	
Married, but separated	Divorced/Separated/Widowed
Widowed	
5. If you have a spouse or live-in partner.....	
a. How would you describe their employment status?	
Working for an employer full time (more than 30 hours per week)	Employed
Working for an employer part time (one hour or more a week)	Unemployed
Self-employed, employing other people	
	Do not have a spouse or live-in
Self-employed, not employing other people	partner
On a government employment or training scheme	
Waiting to start a job he/she has already accepted	
Unemployed and seeking a job	
At school or in other full time education	
Unable to work because of long term sickness or disability	
Retired from paid work	
Looking after the home or family	
Other	
7. Please tick the box which best describes *how* you and your household occupy your accommodation.*	
As an owner-occupier:	
-buying the property through mortgage or loan	Owner-occupied
-owning the property outright (no loan)	Rented
By renting, rent free, or by lease:	
-with a job, farm, shop or other business	
-from a local authority (Council)	
-from a New Town Development Corporation	
(or Commission) or from a Housing Action Trust	
-from a housing association or charitable trust	
-from a private landlord, furnished	
-from a private landlord, unfurnished	
-from a housing association or charitable trust	
In some other way:	
-please give details below	

*Respondents chose one out of the eleven options above.

9. Please tick the appropriate box to indicate the number of cars and vans normally available for use by you or members of your household (other than visitors).

Include any car or van provided by employers if normally available for use by you or members of your household, but exclude vans used only for carrying goods.

None
One
Two
Three or more

None
One
Two or more

10. For how long have you lived in Scotland?

All my life
More than 5 years
Less than 5 years
Less than 1 year

All my life
Any other length of time

12. For how long have you lived in your current neighbourhood?

All my life
More than 5 years
Less than 5 years
Less than 1 year

5 or more years
Less than 5 years

27. Please tick the appropriate box to indicate the number of cars and vans normally available for use by you or members of your household (other than visitors).

Include any car or van provided by employers if normally available for use by you or members of your household, but exclude vans used only for carrying goods.

None
One
Two
Three or more

None
One
Two or more

28. How would you describe your head of household's occupation (usually the father)

Working for an employer full time (more than 30 hours per week)
Working for an employer part time (one hour or more a week)
Self-employed, employing other people

Self-employed, not employing other people

On a government employment or training scheme

Waiting to start a job he/she has already accepted

Unemployed and seeking a job

At school or in other full time education

Unable to work because of long term sickness or disability

Retired from paid work

Looking after the home or family
Other

Employed
Unemployed

39. Would you say that for your height you are..... About the right weight Slightly over weight Very over weight Slightly underweight Very underweight	About the right weight Slightly under or over weight Very under or over weight ***Also recoded as:*** About right or slightly over/under weight Very overweight Very underweight
41. On average, how many times a week do you engage in any regular exercise, such as jogging, cycling, aerobics, or brisk walking, long enough to work up sweat?	Scale variable categorized as: Do not exercise 1 or 2 times per week 3 or more times per week
42. In the average week approximately how many units of alcohol do you consume?	Scale variable categorized: 14 or more units per week <14 units per week
From nurses' questionnaire: **45. What is your *highest* level of nursing education?** - Registered General Nurse - Registered Mental Nurse, Registered Sick Children's Nurse, or Registered Nurse for the Mentally Handicapped Diploma - Bachelors Degree - Masters Degree - Other ***From teachers' questionnaire:*** **45. What is your highest level of education?** Bachelor of Education Degree Bachelor's Degree plus Postgraduate Certificate of Education Masters Degree Other, please specify	 Basic Advanced
14. In a day how many of the following do you usually smoke? (Please write a number) _____ branded cigarettes _____ hand rolled cigarettes	***Scale variable categorized as:*** <10 per day 10 or more per day ***Also categorized as:*** <20 per day 20 or more per day

4.7.4 Creation of New Variables

Health Consequences of Tobacco Use

Each item on the health consequences of smoking was given a score of one if answered correctly, and zero if the respondent answered incorrectly or gave a "do not know" response (Table 4.4). These individual scores were also summed to create a total knowledge score out of a possible 13 points.

TABLE 4.4: QUESTIONNAIRE ITEMS ON THE HEALTH CONSEQUENCES OF TOBACCO USE

79. *For which conditions is the following statement true?*[a] "Passive smoking (second hand smoke) increases a non-smoking adult's risk of certain medical conditions." • Lung cancer • Bronchitis • Diabetes • Heart disease • Asthma
80. *For which conditions is the following statement true?*[a] "Passive smoking (second hand smoke) increases a child's risk of certain medical conditions." • Chest infection • Cot death • Diabetes • Glue ear • Asthma
82. Those who smoke regularly and die of a smoking related disease lose a number of years from their life expectancy compared to non-smokers. About how many years, on average, do they lose?[b]
83. Among smokers who get lung cancer, how likely are women to develop the most deadly form of the disease, compared to men?[c]
84. Babies born to mothers who smoker during pregnancy are, on average…(lighter, the same weight, or heavier) than babies born to non-smoking mothers.[d]

[a]All are true except for diabetes.
[b]Respondents were given options of 5, 10, 15, and >15 years. The correct answer is >15 years lost.
[c]Respondents were given the options 'half as likely as men', 'just as likely as men', and 'twice as likely as men'. The correct answer is 'twice as likely as men'.
[d]The correct answer is 'About 200 grams (8 ounces) *lighter* than babies born to non-smoking mothers'.

Social Capital in the Workplace

Each construct of social capital - identity, trust, reciprocity, and engagement - was gauged by responses to specific items in the questionnaire (Table 4.5). Some questions were used for more than one construct since they captured more than one dimension of social capital. For example, item 52 ("My colleagues and I form a cohesive and supportive group") captures the constructs of identity, with a respondent feeling or not feeling part of this group, and reciprocity, with a

respondent agreeing or not agreeing that their work colleagues are supportive of one another.

Each item was given one point for a response of 'Strongly Disagree'; two for 'Moderately Disagree'; three for 'Moderately Agree'; and four for 'Strongly Agree'. Totalling the points for each of its items and dividing by the number of items to which the person responded calculated an average score for each construct. An additional point was added to the engagement score if respondents indicated that they were actively involved in a work-related organization or union. These average scores were then summed, resulting in a social capital index for the workplace. Percentage scores were calculated for each of the four indices and the social capital index, and then transformed into categorical variables (quartiles). The individual constructs, rather than the index, were used in data analysis. It is important to note that what was being measured here was *individual perception* of social capital and each of its constructs in the workplace, thus the questionnaire does not provide an area-level or aggregate measure of the particular school or hospital in which each respondent was employed.

TABLE 4.5: QUESTIONNAIRE ITEMS USED IN THE CONSTRUCTION OF A SOCIAL CAPITAL INDEX FOR THE WORKPLACE

SOCIAL CAPITAL CONSTRUCTS	QUESTIONNAIRE ITEMS
identity	50. I feel a stronger affinity to my colleagues than the people who live in my neighbourhood. 52. My colleagues and I form a cohesive and supportive group. 57. If I needed assistance on a personal matter I would feel comfortable turning to a colleague at work.
trust	56. Some of my workmates are also some of my closest friends. 57. If I needed assistance on a personal matter I would feel comfortable turning to a colleague at work. 59. Most people I work with can be trusted. 60. I trust my local education authority to provide a fair working environment for teachers.
reciprocity	52. My colleagues and I form a cohesive and supportive group. 57. If I needed assistance on a personal matter I would feel comfortable turning to a colleague at work. 58. I would be willing to work together with my colleagues in order to improve our workplace.
engagement	58. I would be willing to work together with my colleagues in order to improve our workplace

Community Social Capital

A similar process to the one outlined above was used in calculating scores for each of the four constructs of social capital outside of the workplace and creating an index for total social capital. Again, these measures are of the *individual's perception* of the levels of trust, reciprocity, and identity, and their engagement in activities and associations. Questions were used to measure trust in one's neighbours, as well as trust in the local and national government. Trust in neighbours was gauged by whether respondents felt they were safe in their neighbourhood and whether neighbours could be trusted or would help in an emergency. Trust in government was measured by respondent's views on government performance and empathy with the public. In a few instances, certain questions were seem as capturing more than one dimension of social capital, e.g., question 18 ("There is a good sense of community in my neighbourhood") was seen to get at both civic identity and trust.

The score for civic identity was calculated by giving one point for a response of 'Strongly Disagree'; two for 'Moderately Disagree'; three for 'Moderately Agree'; and four for 'Strongly Agree' to items 14, 16, and 18 (Table 4.6). Points were also awarded depending on the length of time the respondent had lived in their current neighbourhood - one point for less than one year, two points for less than five years, three points for more than five years, and four points if they had lived there all of their life (it was felt that the longer a person lived in their neighbourhood, the stronger their identity with it would be). One point was also given if the respondent belonged to one or more of the groups listed in question 78.

The four levels of agreement scoring scheme was used for all items in the trust and reciprocity constructs, as well as for one item (question 20) in civic engagement. For civic engagement points from 0 to 4 were 'awarded' for items 63, 65, and 66 with higher points for greater frequency. Item 64 had a similar, but three-point, scoring scheme. Respondents were awarded one point for each of the elections in which they voted (items 67 to 69 inclusive) and one point if they actively participated in one or more of the clubs or associations listed in question 78. Percentage scores were calculated for each of the four constructs and the total social capital score, and then transformed into categorical variables (quartiles). Like the analysis for workplace social capital, it was the individual construct scores that were used in analysis rather than the index.

Community Social Capital Whilst Growing Up

The four point Likert scale of agreement/disagreement was used for *individuals' perceived level* of all constructs of community social capital whilst growing up. Table 4.7 lists the items used for each construct in this manner. Civic engagement was also gauged by response to questionnaire item 29, with one point awarded for a 'yes' response. Percentage scores were calculated for each of the four constructs and the total social capital score, and then transformed into categorical variables (quartiles).

TABLE 4.6: QUESTIONNAIRE ITEMS USED IN THE CONSTRUCTION OF THE CONSTRUCTS FOR COMMUNITY SOCIAL CAPITAL

SOCIAL CAPITAL CONSTRUCTS	QUESTIONNAIRE ITEMS
civic identity	14. The friendships and associations I have with other people in my neighbourhood mean a lot to me. 16. I feel at home in my neighbourhood. 18. There is a good sense of community in my neighbourhood. 78. Belong to one or more of the following: neighbourhood watch scheme, tenants' group, residents' association, or neighbourhood council
trust	13. I feel safe walking down my street after dark. 15. My neighbourhood has a reputation for being a safe place. 17. My neighbours would help in an emergency. 18. There is a good sense of community in my neighbourhood. 19. Most people in my neighbourhood can be trusted. 70. The Scottish Executive (Parliament) pays attention to what the general public thinks when making decisions. 71. The Scottish Executive (Parliament) does not waste taxpayer's money. 72. The Scottish Executive (Parliament) has the public's best interests at heart. 73. The Scottish Executive (Parliament) has performed well since the May 1999 elections. 74. My local government pays attention to what the community thinks when making decisions. 75. My local government does not waste taxpayer's money. 76. My local government has the community's best interests at heart. 77. My local government tells the public all it needs to know about relevant issues in the community.
reciprocity	17. My neighbours would help in an emergency. 18. There is a good sense of community in my neighbourhood. 19. Most people in my neighbourhood can be trusted. 20. I would be willing to work together or have worked together with others to improve my neighbourhood.
civic engagement	20. I would be willing to work together or have worked together with others to improve my neighbourhood. 63. Approximately how often do you read a national newspaper? 64. Approximately how often do you read a local newspaper? 65. Approximately how often do you watch a national news program on television? 66. Approximately how often do you watch a local news program on television? 67. Did you vote in the general election of 1997? 68. Did you vote in the last local/council elections held in your area? 69. Did you vote in the Scottish Parliament elections held in May 1999? 78. Belong to one or more of the following: Sports club, Sports supporters' club, Social club, Volunteers, e.g., St. John's Ambulance, Hobby or interest group, Church or religious groups, Political party, Neighbourhood watch scheme, Tenants' group, Residents' association, Neighbourhood council, Other

Carstairs Score

The Carstairs deprivation score was chosen for this project given that it was developed in Scotland, the setting for the research in question, and it represented an area-based measure of deprivation that could be linked to the postcode area in which each respondent resided. Although the score is based on only four variables, it is highly correlated with many other social variables, including positive correlations with council tenure, one-parent households, and permanent sickness, and negative

correlation with higher education (Carstairs and Morris, 1991). It has also provided a strong basis for explaining variations in health across Scotland.

Postcodes, past and present, were linked to Carstairs deprivation scores. The Royal Mail lookup table was used to identify which pseudo postcode sector (the Scottish census equivalent of the ward in England and Wales) each postcode fell within. The pseudo postcode sector code was then used to associate the record with a pre-calculated Carstairs value.[x]

4.7.5 Conclusion

After recoding and the creation of new variables, the final data set contained 435 variables, 200 more than the original data set. Many of these variables, however, were created for the sole purpose of aiding in the calculation of others and were not used in any statistical analyses.

TABLE 4.7: QUESTIONNAIRE ITEMS USED IN THE CONSTRUCTION OF THE CONSTRUCTS FOR COMMUNITY SOCIAL CAPITAL WHILST GROWING UP

SOCIAL CAPITAL CONSTRUCTS	QUESTIONNAIRE ITEMS
identity	32. I felt at home in my neighbourhood. 34. There was a good sense of community in my old neighbourhood. 36. My parents (or guardians) were willing to or did work with others to improve our neighbourhood.
trust	30. I felt safe walking down my street after dark. 31. My neighbourhood had a reputation for being a safe place. 34. There was a good sense of community in my old neighbourhood. 35. Most people in my old neighbourhood could be trusted.
reciprocity	32. I felt at home in my neighbourhood. 34. There was a good sense of community in my old neighbourhood. 36. My parents (or guardians) were willing to or did work with others to improve our neighbourhood.
engagement	29. Were one or both of your parents (or guardians) active members of one or more local organisations or clubs (e.g., sport, craft, social, political)? 36. My parents (or guardians) were willing to or did work with others to improve our neighbourhood.

4.7.5 Dependent and Independent Variables

The previous sections summarized the way in which the questionnaire data were entered and prepared for analysis. This section provides an outline of the dependent and independent variables in this study thus paving the way for the following section on the statistical analyses employing these variables.

Three dependent variables are examined in this study. The first is whether the respondent is a current smoker or not; the second, whether a current smoker started smoking before age 16 or after; and the third, among all respondents who have ever smoked who has quit smoking. These three variables were chosen in order to address key questions of the study. In particular, what predicts smoking maintenance and cessation, and what variables predict or are associated with early smoking initiation (before the age of 16 when one is legally entitled to purchase tobacco products)?

These three dependent variables were each examined in relation to six categories of independent variables: personal characteristics; health knowledge indicators; current social capital, neighbourhood and household characteristics; personal health; childhood social capital, household and neighbourhood characteristics; and social capital and other workplace characteristics (Table 4.7). In particular, I was interested in the possible existence of a linear relationship between the various social capital construct scores and the likelihood of being a current smoker, an ex-smoker, and a smoker who took up the habit before the age of 16. It was not thought that current characteristics were predictive of past behaviour (i.e., smoking before age 16).

Rather, it was of interest to examine possible relationships between past behaviour and present circumstances.

TABLE 4.7: INDEPENDENT VARIABLES EXAMINED IN THEIR RELATIONSHIP TO CURRENT SMOKING STATUS

INDEPENDENT VARIABLES
A. Personal characteristics
Age Marital status Highest level of education Occupation Presence of children in the household Ethnicity Spouse/partner's employment status Length of time respondent has lived in Scotland
B. Health knowledge (indicated by correct responses to the following)
For which conditions is the following statement true? "Passive smoking (second hand smoke) increases a non-smoking adult's risk of certain medical conditions." • Lung cancer • Bronchitis • Diabetes • Heart disease • Asthma
For which conditions is the following statement true? "Passive smoking (second hand smoke) increases a child's risk of certain medical conditions." • Chest infection • Cot death • Diabetes • Glue ear • Asthma
Those who smoke regularly and die of a smoking related disease lose a number of years from their life expectancy compared to non-smokers. About how many years, on average, do they lose? • 5 • 10 • 15 • >15
Among smokers who get lung cancer, how likely are women to develop the most deadly form of the disease, compared to men? • Half as likely as men • Just as likely as men • Twice as likely as men
Babies born to mothers who smoker during pregnancy are, on average…(lighter, the same weight, or heavier). • About 200 grams (8 ounces) *lighter* than babies born to non-smoking mothers • About the *same* weight as babies born to non-smoking mothers • About 200 grams (8 ounces) *heavier* than babies born to non-smoking mothers

C. Current Social Capital, Household, and Neighbourhood Characteristics

Area deprivation (Carstair's Index)
Social capital
Trust
Reciprocity
Identity
Engagement
Number of cars/vans available for use
Length of time in current neighbourhood
Whether respondent feels safe walking down their street after dark.
Whether the friendships and associations with other people in the neighbourhood are meaningful.
Whether respondent's neighbourhood has a reputation for being a safe place.
Whether respondent feels at home in their neighbourhood.
Whether neighbours would help in an emergency.
Whether there is a good sense of community in respondent's neighbourhood.
Whether respondent feels most people in their neighbourhood can be trusted.
Whether respondent would be willing to work or has worked with others to improve their neighbourhood.
Tenure of housing
Smoking restrictions in home
Presence of other smoker(s) in home
Household overcrowding

D. Personal Health and Behaviour

Presence of limiting long term illness
Presence of a health condition caused or exacerbated by smoking
Perception of body weight
Number of exercise sessions per week
Units of alcohol consumed per week

E. Childhood Social Capital, Household and Neighbourhood Characteristics

Deprivation
Social capital
Trust
Reciprocity
Engagement
Identity
Number of cars/vans available for use
Smoking restrictions in home
Presence of any other smoker(s) in home
Father smoked
Mother smoked
Brother(s) smoked
Sister(s) smoked
Household overcrowding

F. Workplace Social Capital and Other Workplace Characteristics

Workplace social capital
Workplace trust
Workplace reciprocity
Work engagement
Work identity
Smoking policy at work
Whether respondent thinks all smokers comply with work smoking policy
Whether respondent is satisfied with control over job
Whether respondent has suffered work-related stress
Whether respondent works full or part-time

4.8 Statistical Analyses

Initial exploration of the data, that is calculating frequencies and means, was followed by bivariate and multivariate analysis. This section outlines the statistical analysis methods used in exploring the relationship between individual, social and environmental variables and smoking status.

4.8.1 Bivariate Analysis

The first and preliminary stage of analysis was to examine the bivariate association between each of the independent variables from the six areas listed in Table 4.7 and each of the three dependent variables regarding smoking behaviour. The results of this stage provided a descriptive mapping of the relationships that informed the second stage of analysis. Binary logistic regression analysis was used to calculate odds ratios and 95 per cent confidence intervals to determine single variables with a significant relationship to being a current smoker, smoking before the age of 16, and having quit smoking.

The same bivariate analysis was then conducted for nurses only and teachers only. However, since the number of female teachers who smoked was relatively small (n=34) it was not feasible to run regression analysis with this group for calculating odds of smoking before the age of 16.

4.8.2 Multivariate Analysis

The second stage focused on the factors identified as significantly related to smoking status in the bivariate analysis and tested whether their effect disappeared after taking account of the influence of the other significant variables. Stepwise multivariate binary logistic regression analysis was used to identify the factors that exerted significant and independent effects on smoking behaviour. Analysis again included the calculation of odds ratios and 95 per cent confidence intervals.

These final models were run for each of the three dependent variables (odds of being a current smoker, odds of having quit, and odds of smoking before the age of 16) for the entire study sample, and then for nurses and teachers separately. As mentioned previously odds of smoking before the age of 16 for teachers only were not calculated. Another dependent variable - average number of cigarettes smoked per day - was initially considered in the analysis. However, bivariate logistic regression analysis revealed no difference in the independent variables in this study between women who smoke 10 or more cigarettes and those who smoke less, or between those smoking 20 or more cigarettes per day and those who smoke less. Further details and the results of the multivariate models are provided in Chapter 6.

4.9 Discussion of Results with Nurses and Teachers

The final stage of research involved discussing the results of the statistical analysis with nurses and teachers. Meetings with women in these occupations occurred in the form of small group discussions. These meetings were meant to gather nurses' and

teachers' views on the smoking and non-smoking behaviour of their colleagues across Scotland, and to provide insight into why this behaviour occurred.

Statistical analysis was completed and meetings arranged in early August 2001. At this time all Scottish teachers, and many other people in the general population, including nurses, were on holiday from work. Therefore meetings were arranged with a small number of nurses and teachers.

Group discussions were held separately with three teachers and three nurses. Each meeting was initially quite structured and started with a brief overview of the research project and the concept of social capital. Although not technically organized as focus groups, the discussion group participants were then read the "rules of the focus group" as outlined earlier in this chapter. These rules allow for frank and open discussion in group settings. All participants agreed to audiotaped recording of the discussions on the condition that they would not be identified by name in any subsequent publication.

All discussions followed the same format (Appendix Five) whereby participants were asked their views on, among other things, smoking prevalence among their colleagues in Scotland; the reasons for smoking and cessation among nurses and teachers; and the link between smoking behaviour and the work environment. The discussion also allowed participants to reflect on their own experiences with smoking and cessation.

4.10 Conclusion

This chapter has outlined how focus groups and an extensive literature review aided in the development of a questionnaire aimed at generating primary data on the smoking behaviour of female nurses and teachers in Scotland. It has also summarized how this primary data was coded, entered, prepared for analysis, and ultimately, analysed. The results of this analysis are presented in three chapters and follow the next, which presents the findings of the focus groups. The third results chapter reveals the findings of the discussions held with nurses and teachers following analysis of the data.

CHAPTER FIVE - FOCUS GROUP RESULTS

5.1 Introduction

This chapter discusses the findings of two focus groups held with nurses and teachers prior to questionnaire development. As described in the previous chapter, I began each session with a brief description of focus group methodology, the 'rules of the focus group', and the focus of the discussion. Participants then completed a mini-questionnaire on their knowledge of the health consequences of smoking (Appendix Two). This was followed by a structured discussion on the topics of smoking and non-smoking behaviour, social networks and community, and reasons behind choosing their profession.

This chapter presents nurse and teacher focus group results separately. Participants are denoted as Nurses One to Six and as Teachers One to Five in order to ensure confidentiality. Some of the participant quotes have had words added in by the author; these words are in brackets and for the purpose of clarifying what the participant said. Sections are provided on: smoking prevalence, reasons for smoking and the social nature of the habit, how smokers are perceived, and means of dealing with stress.

5.2 Discussions with Teachers

5.2.1 Smoking Prevalence

Smoking Behaviour

All five participants were non-smokers although two had smoked in the past. Of the two who had smoked, one girl was 19 years old at the time and had tried only once. She stated that she was in a dance club with a group of female friends and was intoxicated at the time. However, she did not feel pressurised into smoking and only tried to "see what it was like". The second girl who reported previous smoking behaviour had been 15 years old and had engaged in the behaviour a few times but did not continue the habit beyond this. She too had been with a group of female friends but did not feel pressurised into smoking.

The other three participants in the group had never tried smoking with similar reasons offered by all. These included that the smell was unpleasant and the habit was "bad for you". The two who had tried smoking stated that these were reasons they did not continue. One of the participants also stated that the cost of smoking was a deterrent because it was an expensive habit.

Attitudes Toward Smoking Behaviour

All participants felt teachers should be positive role models for children with regard to health behaviour, especially smoking. However, they felt that providing an example for students should not extend beyond the workplace:

> *"You have to present the facts to the children (students) but you should be able to do what you want on your own time" (Teacher One)*

Responses were somewhat mixed when asked if they thought nurses should be positive role models with regard to health behaviour. One participant responded:

"When you say positive role models do you mean outside work as well? As long as they (nurses) go to patients with adequate information then that's good enough" (Teacher One)

Most other group members supported this view, with one adding:

"As long as the nurses present the facts to the patients, they should be able to do what they want on their own time" (Teacher Two)

However, one participant noted:

"I do think it's odd to see a nurse smoking because they are in charge of health care". (Teacher Three)

That said, they also felt, to varying degrees, that smokers in general were entitled to some rights when it came to engaging in this behaviour. When asked if people should be allowed to smoke in restaurants, two said absolutely not. The other three participants felt restaurants should cater to smokers and non-smokers. In fact, the group participants (all non-smokers) often sat in the smoking section of a restaurant since they were with a person(s) who smoked. But it was also noted:

"Smoking and non-smoking sections aren't really separate in many places. Smokers should have a place to smoke but it's a difficult issue because it really puts me off my food if there's a lot of smoke in a restaurant" (Teacher Three)

When asked about smoking in public places such as hospitals, government buildings and universities, participants supported the idea of allowing smoking in designated areas. One person commented that:

"You can't go from being allowed to smoke everywhere to being allowed to smoke nowhere". (Teacher Four)

5.2.2 Networks and Communities

This part of the focus group discussion dealt with the relationships teachers had with colleagues and the degree to which they engaged in their work and home communities. Two of the teachers said they socialised with colleagues on a regular basis outside of work. Three participants stated they rarely, if ever, socialised with co-workers outside of working hours. However, all stated they felt very much a part of a cohesive group within their school.

"Definitely. We share experiences. There are no tensions within our staff. You may get along with one or two people better than others, but everyone gets along" (Teacher Five)

When asked for examples of how this "cohesiveness" was evident or how it arose, two participants revealed the importance of shared work experiences. Teachers bond because of similar experiences in the classroom. Most of the participants also said they would feel comfortable seeking advice or help from a colleague on a work related issue.

"Quite a lot of people share ideas. We also check to see that one another are doing alright" (Teacher Four)

However, most would turn to a family member or friend outside of work regarding personal difficulties or problems.

> *"My personal life is just that – personal. I wouldn't feel entirely comfortable talking about very personal issues with people at work. One of the other teachers is a good friend of mine but even we keep our work and personal lives separate" (Teacher Two)*

All participants had volunteered or participated in extra-curricular activities or organisations whilst in their teen years. These activities included those of a sporting, religious, or service nature. All participants currently participated in similar activities either directly or indirectly (coaching student sports teams or being involved via their own child or children's participation).

All participants reported regularly reading a national newspaper at the weekend, with one also reading a local weekly newspaper. Only one of the five had voted in their most recent local council elections.

5.2.3 Occupation

Various answers were given to the question of why the participants chose to become teachers. Three stated they had enjoyed working with children in the past through volunteering with different youth groups and activities.

> *"I enjoyed working with children after volunteering with different children's groups. I wanted to be a teacher since I was 13. I went off the*

idea for a couple of years but then it appealed to me again after doing volunteer work" (Teacher Three)

One participant felt she had several poor quality teachers whilst she was a student and thus wanted to become a good teacher and thus contribute to improving the school system.

"I had so many poor teachers whilst I was at school. I didn't realise at the time what a difficult job it is" (Teacher Four)

Finally, one participant had completed a degree in world development and Third World issues, and wanted to work in this area and felt an education degree was a step towards this goal.

5.2.4 Results of Quiz on Health Consequences of Tobacco Use

Questions that all participants answered correctly were those on passive smoking increasing a non-smoking adult's chances of developing lung cancer and bronchitis, and a child's chances of developing chest infection and asthma; and that babies born to mothers who smoke during pregnancy weigh less than those of non-smoking mothers.

One question answered incorrectly by all participants was that on the chances of a female smoker developing the most deadly form of lung cancer compared to male smokers.

The remaining questions had a mix of incorrect, correct and "do not know" responses. These included the questions on passive smoking increasing a non-smoking adult's risk of developing diabetes, heart disease or asthma, and a child's chances of developing diabetes or glue ear, or of dying a cot death. Some respondents either did not know or answered incorrectly the questions on life years lost on average to smoking and the average amount of money spent per annum by the NHS on smoking related diseases.

5.3 Focus Group Results: Nurses

5.3.1 Smoking Behaviour and Attitude Towards Smoking

Smoking Behaviour

Of the six nurses three were current smokers, one was an ex-smoker and two had never smoked. The only reason given by participants for initiation into smoking was the same as that for teachers - "Wanted to see what it was like". However, there were several reasons given for maintaining and enjoying the habit, with the most common being:

- Something to do with the hands
- Relaxation
- Accompanies tea or coffee
- Accompanies alcoholic beverages
- A social thing to do
- Calming effects

The most common reasons given for never smoking were health related and included having asthma or allergies as well as awareness of the increased risk of lung cancer and heart disease. The one ex-smoker reiterated these as reasons why she did not resume smoking, although the reason given for cessation was related to feeling pressurised by her children and spouse. Her family was concerned for her health and also disliked the smell of cigarette smoke in the family home.

> *"They (family) were on me all the time to quit. For a long time it just annoyed me and made me smoke even more. When our youngest developed asthma it really hit home that I was affecting other people with my habit and I just had to quit" (Nurse One)*

The current smokers gave different reasons for continuing the habit. One stated she was "not ready to quit" and that many of her friends smoked. The other two smokers had actually tried to quit in the past for various reasons including a concern for their personal health, concern for health of people around them (usually their children), concern for the foetus while pregnant, and feeling pressurised by family members to quit.

> *"When I've been expecting I've always quit...but I think I knew I'd start smoking again at some point after the baby was born" (Nurse Two)*

Relapse occurred due to fear of, and actual, weight gain and feeling too "stressed" without cigarettes.

> *"It's often my only time to have a few minutes to myself" (Nurse Three)*

"Every time I've quit I've put on about a stone. I don't know why...I don't think I eat any more when I'm not smoking. So...yeah...I've always gone back to smoking and always lose the weight" (Nurse Two)

"It seems to be something I do when something's gone wrong or there's too much going on in my life" (Nurse Four)

The smokers were asked where they usually smoked, whether they did so at work, and if so, with whom. These women smoked mainly at home, in bars and pubs, and in the car while travelling. The women also mentioned smoking, to a lesser extent, in cafes and restaurants. One said she did not like other people smoking while she was eating, and thus did not like to smoke while other people were enjoying their meal.

One of the smokers never engaged in the habit at her workplace, although two of the nurses did. The latter usually smoked with colleagues outside the building since their workplace operated a strict no-smoking policy. One of the nurses stated that, whilst on a break, she would sometimes sit in her car to smoke because of inclement weather, and she noticed other nurses would often do the same.

The nurse who smoked only outside of work did so in order to avoid hearing comments from co-workers about her habit:

"I hate being preached at. It's just not worth having to hear them (co-workers) tell me I should quit smoking and the reasons why. I know I need to quit and yes...I know what it does to my health, I'm a nurse after all. So I don't need to hear it from anyone else" (Nurse Four)

Attitudes Towards Smoking Behaviour

All the participants considered health promotion to be a very important aspect of the nurse's role yet felt that they were entitled to live their lives as they saw fit as long as they provided appropriate information to their patients. In fact, all but one of the participants felt that nurses should be able to smoke outside the building whilst at work. However, one nurse (a non-smoker) felt that no hospital staff, especially nurses, should be allowed to smoke at all whilst working. She stated:

> *"When one of the nurses comes in after a cigarette break I can really smell the smoke off her and it's disgusting. We are in close contact with patients all the time and they should have to put up with that (the smell of cigarette smoke)" (Nurse Five)*

Someone else added:

> *"You would not believe that even some nurses who work in the cancer unit will go out to smoke and if someone's had chemotherapy they'll be very nauseous...if a nurse who's just been smoking leans over them, they're like 'Get me the sick bowl!'" (Nurse One)*

Responses were mixed regarding various other places in which smoking should or should not be allowed. When asked if smoking should be permitted in restaurants, one nurse said:

> *"Definitely not. I think it's horrible" (Nurse Five)*

The other participants felt it was acceptable as long as it was in the smoking section. One noted however:

> *"(Restaurant) owners need to start doing something about creating a real non-smoking area. Often I'll be at a non-smoking table and at the next table they're smoking. So I'm breathing in the smoke anyway even though I'm in a non-smoking section" (Nurse Six)*

All participants felt that many public places should have designated smoking areas. One reason given was so that people did not have to be out in the cold or rain (Nurse Two, a smoker). Another reason, given by Nurse Six (non-smoker), was that smokers tend to take longer breaks than non-smokers because they actually leave the building. One suggested solution to this problem was to provide a few designated smoking areas throughout the building.

5.3.2 Networks and Communities, Work and Occupation

Participants were asked about the relationships they had with co-workers and how or if they participated in their work and neighbourhood communities. Three of the six nurses considered themselves 'active' in their work unions, although all six were members. The 'active' members mentioned attending meetings and contributing to union activities such as newsletter production. Four of the nurses socialised quite often with co-workers.

> *"I went through training with some of the girls (co-workers). We became good mates then and still go out together" (Nurse Three)*

"Often you don't get a chance to meet people outside work, so yeah, a lot of us go out together" (Nurse Four)

The time to meet other people and the fact that shift work was not conducive to this is reflected in the following comment:

"Sometimes if I'm working long shifts, especially at night, a couple of us will go out afterwards. I have friends who aren't nurses but our schedules clash most of the time" (Nurse One)

Nurses may not mind only socialising with each other at times though:

"Other nurses understand what your day has been like. Sometimes you just want to vent about work at the end of the day and it's...well, sort of easier if there are only other nurses around and not any other people" (Nurse Six)

I asked if working shifts kept them from doing other things and combined this with asking if they participated in any organisations or activities outside of work. This evoked much laughter from the group, and I asked why they were laughing.

"There's just no time to get involved in other things. I go to the gym and that's all I have time for. I'm often too tired to do anything else on top of that" (Nurse One)

"I just really need to unwind after a shift with a glass of wine, and sometimes a cigarette. Even after a night shift and getting home at 4 or 5 in the morning. I just can't go to sleep straight away so I'll be sitting

there in the kitchen at 5 in the morning with my glass of wine..." (Nurse Two)

One of the nurses (Nurse Five), married with two children, said any extra-curricular activity revolved around her children's activities, such as taking them to sports games and practices.

Two of the participants reported reading a newspaper regularly and this was only at the weekend. Even then:

"We get the Sunday Times and it takes me all week to read it. It's just...I'm so busy that often when the paper comes I realise I still haven't read the one from the week before" (Nurse Six)

Three of the six had voted in their most recent local council elections.

To complete the discussion I asked why they had chosen the nursing profession. Although all demonstrated commitment to caring for patients, three of the nurses also mentioned practical motivations such as salary and working conditions.

"My husband and I have eight children and I had always wanted to be a nurse...or from the time I was about 13 anyway. But I had to put that dream on hold just because of the way my life turned out. Anyway with a large family finances are always a concern and I thought I could help my family economically by going back to that dream of being a nurse" (Nurse One)

"Every family has a member or friend who is known as a born nurse. I think I was that person in my family. I have always enjoyed looking after people and after a while everyone sort of turned to me in an emergency" (Nurse Five)

"I think at least part of the reason for everyone is that they care about people. A lot of girls also sort of fall into it because either their mother or an older sister is a nurse" (Nurse Four)

However, two nurses also mentioned they had not been very successful in school and nurse's training was something for which they were qualified.

"I knew I would never have the qualifications for university but I needed to do something and nursing seemed like a good idea" (Nurse Two)

"I actually did go to university for one year but soon discovered that it wasn't for me. It seemed like a long time to spend...I mean, I wasn't sure what I would do after the degree so why waste my time? At least with nurse training you know what you're going to do after" (Nurse Three)

This was followed by related comments on how nursing is viewed by others.

"A lot of girls want a decent job but don't have the right qualifications so nursing is seen as an alright job. It's either that or hairdressing. But there is this perception by the public that it's (nursing) is a thick job and

we don't get treated with respect. Even in hospital the patients call you 'ducky' or 'hen'. They would never call the doctor that" (Nurse Four)

"I worked in the States for a year and nursing seems to be a much more respected profession there and in Canada...friends of mine worked in Canada, in Toronto, and they said it was just incredibly different. The hospitals were clean, the patients respected you, so did the doctors" (Nurse One)

5.3.3 Results of Quiz on Health Consequences of Tobacco Use

Questions that all participants answered correctly were those on passive smoking increasing a non-smoking adult's chances of developing lung cancer, asthma and bronchitis; having no effect on adults or children developing diabetes; and a child's chances of developing chest infection or asthma or dying a cot death; and that babies born to mothers who smoke during pregnancy weigh less than those of non-smoking mothers.

No question was answered incorrectly by all participants but several had a mix of incorrect, correct and "do not know" responses. These included the questions on passive smoking increasing a non-smoking adult's risk of developing heart disease and a child's chances of developing glue ear, and having no effect on childhood diabetes development. Some respondents either did not know or answered incorrectly the questions on life years lost on average to smoking, the average amount of money spent per annum by the NHS on smoking related diseases, and a

female, compared to a male, smoker's chances of developing the most deadly form of lung cancer.

5.4 Conclusion

The focus groups provided insight into smoking initiation, maintenance and cessation among nurses and teachers, in addition to reasons why some have never smoked. These findings were instrumental in designing the questionnaire sections on smoking and non-smoking behaviour. These focus groups thus aided in the development of gathering the main source of data, i.e., the questionnaire results.

In particular, discussion on networks and communities at the workplace and home/neighbourhood aided in developing questions aimed at gauging social capital in these settings. Also, the choice of occupation reveals a relationship between community engagement and pursuing a career in teaching. Although all mentioned their interest in caring for others, nurses were also likely to have chosen their profession because it was an occupation attainable with the secondary school qualifications they had achieved.

Nurses scored somewhat better on the health consequences of tobacco use quiz. Given the small numbers in the focus group this difference is not statistically significant. However, any difference of this nature between nurses and teachers will be better gauged by questionnaire responses given the much larger sample size.

The results of the focus groups will be discussed in more detail, and in conjunction with the statistical analysis results, in Chapter Seven.

CHAPTER SIX - STATISTICAL ANALYSIS OF QUESTIONNAIRE RESPONSES

6.1 Introduction

This chapter provides the results of all descriptive and inferential statistics from the questionnaire responses. The descriptive results include details of the current and past demographic, socio-economic, and social capital (at the levels of workplace and community) characteristics of respondents. These results also include information on respondents' health status and behaviour, workplace and occupation, and knowledge of the health consequences of tobacco use. The section on descriptive results concludes with answers to questions asked only of respondents who classified themselves as a current smoker, an ex-smoker or one who had never smoked. Any significant differences between nurses and teachers are noted but for much of the chapter they are discussed as a combined group.

Results of the inferential statistical analysis follow in two main sections – bivariate and multivariate. Each of these two sections is divided into three subsections according to three dependent variables. The first variable is whether one is a current smoker or not (an ex-smoker or one who has never smoked). The second dependent variable is whether one is an ex-smoker as opposed to a current smoker. The third dependent variable is whether a current smoker commenced the habit before the age of 16 or when they were 16 or older. The ***discussion*** of these results follows in the next chapter.

6.2 Descriptive Results

6.2.1 Demographic and Socio-economic Characteristics

Current Characteristics

Table 6.1 provides the results described in this section and notes that not all variables contain all respondents due to missing data. However, missing data for most variables accounts for less than 1% of cases. Exceptions to this are the variables of highest level of education (2% missing), overcrowding (3% missing), and current postcode (14% missing).

The majority of the sample was married and over half were aged between 35 and 54 years (Table 6.1). The sample comprised slightly more teachers (n=491) than nurses (n=426), with similar proportions of those with basic (53%) rather than advanced (47%) education.

Table 6.2 compares the age structure of nurse respondents to all qualified nurses employed by the NHS in Scotland. In the study nurses under the age of 35 are somewhat under represented, while those older are over represented. Without knowing anything about the non-respondents it is not possible to know if they differed significantly from respondents. One possible reason for the lower proportion of nurses younger than 35 is the greater likelihood of having young children in the household whose presence could make it more difficult to find the time to complete and return a questionnaire. Furthermore, Chi-square analysis reveals that nurses

under the age of 35 were significantly more likely to work full-time than nurses in the other age groups.

TABLE 6.1: CURRENT DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS OF RESPONDENTS

VARIABLE	ALL RESPONDENTS		NURSES ONLY		TEACHERS ONLY	
	n[a]	%	n[a]	%	n[a]	%
Age						
<35	192	21.0	118	27.7	74	15.1
35 to 44	323	35.3	160	37.6	163	33.2
45 to 54	286	31.2	111	26.1	175	35.6
>55	115	12.6	36	8.5	79	16.1
Marital status						
Single (never married)	170	18.6	85	20.0	85	17.3
Married	615	67.1	270	63.4	345	70.3
Divorced/Separated/Widowed	131	14.3	71	16.7	60	12.2
Presence of children in household						
Yes	528	57.6	252	59.2	276	56.2
No	389	42/4	174	40.8	215	43.8
Highest level of education						
Basic	477	53.1	367	88.0	110	22.4
Advanced	421	46.9	50	12.0	371	75.6
Occupation						
Teacher	491	53.5	N/A	N/A	N/A	N/A
Nurse	426	46.5				
Spouse or live-in partner's employment status						
Employed	618	67.4	285	66.9	333	67.8
Unemployed	77	8.4	35	8.2	42	8.6
No spouse or live-in partner	222	24.2	106	24.9	116	23.6
Ethnicity[b]						
White-Scottish	814	88.8	383	89.9	431	87.8
White-English	48	5.2	16	3.8	32	6.5
White-Irish	22	2.4	10	2.3	12	2.4
White-Other	28	3.1	12	2.8	16	3.3
Number of cars/vans available for use						
None	52	5.7	33	7.7	19	3.9
One	378	41.3	194	45.5	184	37.5
Two or more	485	53.0	198	46.5	287	58.5
Housing tenure						
Rented (public and private)	59	6.5	31	7.3	28	5.7
Owner-occupied	847	93.5	390	91.5	457	93.1
Number of people per room						
<1	720	83.6	305	71.6	415	84.5
≥1	141	16.4	98	23.0	43	8.8
Length of time in current neighbourhood						
≥5 years	691	75.9	310	72.8	381	77.6
<5 years	219	24.1	112	26.3	107	21.8
Length of time living in Scotland						
Entire life	754	82.3	363	85.2	391	79.6
Any other length of time	162	17.7	63	14.8	99	20.2

[a]Due to missing data, not all variables contain all respondents. However, missing data accounts for <2% of respondents in all categories except for education (4% missing data) and number of people per room (12% missing data).
[b]These categories capture 99% of respondents, with the other 1% belonging to Black-Caribbean, Black-African, Black-Other, Indian, Pakistani, Bangladeshi, Chinese, or any other ethnic group.

TABLE 6.2: AGE STRUCTURE OF NURSES

AGE GROUP	NUMBER OF QUALIFIED FEMALE NURSES EMPLOYED BY THE NHS IN SCOTLAND AT 30 SEPT 1999*	%	NUMBER OF NURSES IN PRESENT STUDY	%
Under 25	6 045	16.0	20	4.7
25 to 34	15 188	40.2	98	23.1
35 to 44	10 563	28.0	160	37.6
45 to 54	5 489	14.5	111	26.1
55+	469	1.2	425	8.5

*Source: National Manpower Statistics from payroll. Information and Statistics Division Scotland

Nurses who work full-time comprise three-quarters of the sample - substantially more than the number of full-time nurses employed by the NHS (Table 6.3). One might assume that if lack of time was a reason for not completing the survey, then nurses working full-time would have been less likely to respond than those working part-time. However, all nurses received the questionnaire at their workplace thus nurses working full-time may have had more opportunities throughout their shift in which to complete it. Furthermore, the contact person distributing the questionnaires in each participating primary care trust may have found it easier to contact the nurses who were in the hospital on a full-time, rather than part-time, basis thus accounting for the bias found in this regard.

TABLE 6.3: WORKING HOURS OF NURSES

HOURS OF WORK	QUALIFIED FEMALE NURSES EMPLOYED BY THE NHS IN SCOTLAND AT 30 SEPT 1999*	%	NUMBER OF NURSES IN PRESENT STUDY	%
Part-time	16 343	43.3	106	25.1
Full-time	21 411	56.7	317	74.9

*Source: National Manpower Statistics from payroll. Information and Statistics Division Scotland

The age structure and working hours of female teachers in the sample compared to their Scottish counterparts is more similar than the comparison between the sample nurses and Scottish nurses. Even still, the 25 to 34 age group is somewhat under represented and the 55+ age group over represented (Table 6.4).

TABLE 6.4: AGE STRUCTURE OF TEACHERS

AGE GROUP	NUMBER OF PUBLICLY FUNDED SCHOOL TEACHERS (FEMALE) IN SCOTLAND, SEPT 1998*	%	NUMBER OF TEACHERS IN PRESENT STUDY	%
Under 25	1 276	3.5	20	4.1
25 to 34	6 415	17.4	53	10.8
35 to 44	11 345	30.7	163	33.2
45 to 54	15 239	41.3	175	35.6
55+	2 651	7.2	80	16.3

*Source: Education Statistics, Scottish Executive Education Department

Teachers working full-time were slightly under represented in the study sample, opposite to the case of the nurse study sample (Table 6.5). Since teachers received their questionnaire at home, those working part-time may have had a greater opportunity to complete the questionnaire than those employed full-time.

TABLE 6.5: WORKING HOURS OF TEACHERS

HOURS OF WORK	PUBLICLY FUNDED SCHOOL TEACHERS (FEMALE) IN SCOTLAND, SEPT 1998*	%	NUMBER OF TEACHERS IN PRESENT STUDY	%
Part-time	4 926	13.5	113	23.6
Full-time	31 566	86.5	366	76.4

*Source: Education Statistics, Scottish Executive Education Department

The vast majority (89%) of the sample described themselves as White-Scottish, with a further 8% describing themselves as either White-English or White-Irish. Just over 80% of respondents reported having lived in Scotland their entire life and three quarters had lived in their current neighbourhood for at least five years, making this a very static population.

About two-thirds of the respondents had a spouse or live-in partner who was employed and less than a tenth had one who was unemployed. About one-quarter reported having no spouse or live-in partner. Over half the respondents reported the presence of children in their household. Very few women had no access to a car or van, with just over 40% reporting one vehicle in their household and over 50% reporting two. Almost all (94%) respondents lived in owner-occupied housing with

only a few residing in rented accommodation. Furthermore, more than 80% reported a household density of less than one person per room.

Of the 917 respondents, 791 provided the postcode of their current address thus allowing determination of the associated Carstairs' index of deprivation for their pseudo postcode sector. The mean score was –1.1922, with scores ranging from –7.72 (least deprived) to 8.33 (most deprived).

Nurses and teachers differed significantly on some of these measures. There were significantly fewer teachers under the age of 34 compared to nurses. Also, nurses were more likely to have lived their entire life in Scotland, live in overcrowded housing, and to have a basic, rather than advanced, level of education. The average Carstairs score for wards was significantly lower (less deprived) for those in which teachers lived. Teachers were also more likely to live in a household with access to two or more vehicles.

Past Characteristics

Table 6.6 provides demographic and socio-economic information for the respondents. Not all variables contain all respondents due to missing data. However, missing data for all variables accounts for less than 3% of cases. The one exception to this is post code of one's address whilst growing up (37% missing).

Just over a quarter of respondents reported no access to a car or van for their household whilst growing up and two-thirds that their household accommodated more than one person per room. Very few respondents (<5%) reported that their

head of household was unemployed. The average Carstairs' index of deprivation was -1.08, with a range of –7.26 (least deprived ward) to 10.76 (most deprived ward).

There were two significant differences between nurses and teachers. That is, nurses were likely to report that their head of household was unemployed and that they lived in overcrowded housing whilst growing up.

TABLE 6.6: SOCIO-ECONOMIC CHARACTERISTICS OF RESPONDENTS WHILST GROWING UP

VARIABLE	ALL RESPONDENTS		NURSES ONLY		TEACHERS ONLY	
	n[a]	%	n	%	n	%
Head of household's employment status						
Employed	862	95.1	391	91.8	471	95.9
Unemployed	44	4.9	27	6.3	17	3.5
Number of cars/vans available for use						
None	244	26.9	122	28.6	122	24.8
One or more	663	73.1	298	70.0	365	74.3
Number of people per room						
<1	299	33.6	102	23.9	197	40.1
≥1	592	66.4	308	72.3	284	57.8

[a]Due to missing data, not all variables contain all respondents. Missing data accounts for 2.2% of respondents for car ownership, 2.5% for head of household's employment status, and 5.8% for number of people per room.

6.2.2 Social Capital Characteristics

Community Social Capital (Current)

Scores for each construct of social capital were calculated according to responses to several questions in the survey (Table 4.6). Higher scores for each construct denote perception of high levels of trust, identity, or reciprocity in one's community, and greater engagement with other individuals in one's community. The average percentage scores for community social capital constructs are shown it Table 6.7.

TABLE 6.7: AVERAGE PERCENTAGE SCORES FOR COMMUNITY SOCIAL CAPITAL CONSTRUCTS

SOCIAL CAPITAL CONSTRUCT	ALL RESPONDENTS	NURSES ONLY	TEACHERS ONLY
	%	%	%
Trust	66.48	65.26	67.50
Identity	78.32	75.67	80.61
Reciprocity	82.87	81.17	84.35
Engagement	82.77	82.38	83.10

Missing data for teachers: One case each for trust and reciprocity scores and three for engagement scores. For nurses: One case each for identity and reciprocity scores and six cases for engagement scores.

Nurses and teachers differed significantly on three of the four constructs with teachers reporting higher scores for identity, trust and reciprocity.

Community Social Capital (Past)

Again, scores were calculated for *each* construct of social capital, but this time regarding its existence in the past. Perception of social capital in one's neighbourhood while growing up was calculated from responses to a number of items in the questionnaire (Table 4.7). The higher the score for trust, reciprocity, and identity, the more it was perceived that they existed in the community. Higher scores for engagement denoted greater participation in the community by the respondent's parents. The average percentage scores of the community social capital constructs (whilst growing up) are given in Table 6.8.

TABLE 6.8: AVERAGE PERCENTAGE SCORES FOR COMMUNITY SOCIAL CAPITAL CONSTRUCTS (WHILST GROWING UP)

SOCIAL CAPITAL CONSTRUCT	ALL RESPONDENTS	NURSES ONLY	TEACHERS ONLY
	%	%	%
Trust	70.20	70.26	70.14
Identity	85.86	86.06	85.69
Reciprocity	85.86	86.06	85.69
Engagement	74.48	73.58	75.24

Missing data for teachers: Twelve cases for engagement scores, eleven cases each for reciprocity and identity scores and ten cases for trust scores. For nurses: Eighteen cases for engagement scores, thirteen cases each for identity and reciprocity scores and ten cases for trust scores.

Workplace Social Capital

Various items from the questionnaire were used in calculating scores for trust, identity, reciprocity, and engagement in the workplace (Table 4.5). Higher scores for the corresponding constructs reflected greater perceptions of trust, reciprocity and

identity, and a high degree of engagement within one's workplace. The average percentage scores of the workplace social capital constructs are listed in Table 6.9.

TABLE 6.9: AVERAGE PERCENTAGE SCORES FOR WORK SOCIAL CAPITAL CONSTRUCTS

SOCIAL CAPITAL CONSTRUCT	ALL RESPONDENTS	NURSES ONLY	TEACHERS ONLY
	%	%	%
Trust	71.83	71.09	72.49
Identity	74.40	74.00	74.76
Reciprocity	81.17	80.83	81.47
Engagement	53.51	53.59	53.44

Missing data for teachers: Eight cases each for reciprocity, identity and trust scores and three cases for engagement scores. For nurses: Three cases each for identity and reciprocity scores, two cases for trust scores, and one case for engagement scores.

6.2.3 Health Status and Behaviour

Most respondents (85%) reported having no limiting long-term illness. When asked if a doctor had ever diagnosed them with any of the following conditions 22% said yes to high cholesterol, 8% to asthma, 6% to high blood pressure, 2% to cancer, and 1% or less to each of angina, heart attack, and stroke. Less than half of all respondents felt they were at the right weight, with 52% stating they were slightly or very overweight and 5% that they were slightly or very underweight.

Only a quarter of respondents thought their diet was as healthy as it could be, with 70% stating it was quite good but could improve and 5% reporting that their diet was not very healthy. Approximately 12% of respondents reported consuming, on average, 14 or more units of alcohol per week. Over one-third engaged in regular exercise three or more times per week with a similar proportion engaging in exercise sessions two or three times per week. Just over a quarter reported not exercising at all.

Nurses were more likely to view themselves as overweight and to have an unhealthy diet, with more having ever been diagnosed with high blood pressure. Teachers however were more likely to have been told by a doctor that they had a high cholesterol level.

6.2.4 Workplace and Occupation

Three-quarters of respondents were working full-time. Over 40% had been at their current workplace for more than 10 years, 22% for six to ten years, 23% for one to five years, and 11% for less than one year. Significantly more teachers than nurses had been at their current place of employment for less than one year, but significantly fewer for more than 10 years.

Over half (56%) of respondents reported that smoking was not allowed in their workplace, but nearly 40% thought that not all smokers complied with workplace smoking policy. Furthermore, fewer nurses reported that smoking was allowed in their workplace but substantially more (60% compared to 17% of teachers) that smokers did not comply with workplace smoking policy.

Although two-thirds stated they were satisfied with the amount of control they had over their job, a similar proportion reported having suffered stress symptoms they believed were related to work. Teachers were significantly more likely to have experienced the latter.

Nearly 60% of the nurses were involved in some type of adult nursing, just under a quarter were involved in midwifery, obstetrics or a related speciality, and nearly

10% in health visiting. Nurses in the clinical areas of mental health and learning disabilities accounted for fewer than 4% of all nurses.

Approximately 40% of the nurses had the basic training of a registered general nurse, 35% had diplomas for Registered Mental Nurse, Registered Sick Children's Nurse, or Registered Nurse for the Mentally Handicapped, and 12% had either a bachelor's or master's degree.

The vast majority (88%) of teachers had been in the occupation for over five years, with less than 4% having taught for less than one year. More than 60% had been teaching at their current school for more than five years, with 61% of these teachers at their current school for over 10 years. Nearly half were teaching primary years, one third secondary, and less than 10% nursery or a combination of nursery and primary. About one third had a teaching diploma, one quarter a bachelor's degree, just under a quarter had a bachelor's degree plus a postgraduate certificate of education, and nearly 15% had a master's degree or PhD.

6.2.5 Knowledge About the Health Consequences of Tobacco Use

Table 6.10 shows the percentage of respondents answering correctly each of the questions about the health consequences of tobacco use. Respondents were fairly knowledgeable on the effects of second hand smoke, except for approximately half indicating that it increases the risk of diabetes (when in fact it has not been shown to do). Furthermore, less than 20% of respondents knew that second-hand smoke increases the risk of glue ear (ear infection) in children.

Less than one-third of respondents realised the extent to which smoking reduces life expectancy, and less than 10% knew that female smokers were particularly at risk from the most deadly form of lung cancer.

Nurses were significantly more likely than teachers to have answered several of these questions correctly, including those on passive smoking and adult/child diabetes, heart disease, chest infection, cot death, glue ear, and childhood asthma; life years lost from smoking; and women's chances of developing the most deadly form of lung cancer. However, as outlined later in the chapter, this knowledge does not appear to discourage smoking behaviour.

6.2.6 Smoking Status

Approximately 18% reported that they were current smokers, 22% that they were ex-smokers, and 60% that they had never smoked. Significantly more nurses than teachers smoked (31% and 7%, respectively). However, one important implication of the under-representation of younger nurses and teachers is that may have resulted in an under estimate of smoking among nurses and teachers in general, since younger respondents were more likely to smoke than older respondents (see results in Section 6.3.1). Ex-smokers comprised 21% and 23% of nurses and teachers respectively, while never smokers comprised 47% and 70%, respectively. Over 80% reported that smoking was partially or totally banned in their home, compared to 36% reporting such a ban in their childhood home. Teachers were significantly more likely than nurses to report a current smoking ban in their home (87% and 78% respectively).

TABLE 6.10: PER CENT OF RESPONDENTS CORRECTLY ANSWERING QUESTIONS ON THE HEALTH CONSEQUENCES OF TOBACCO USE

	WHERE APPLICABLE CORRECT ANSWER DENOTED BY ✓	ALL	NURSES ONLY	TEACHERS ONLY
For which conditions is the following statement true? "Passive smoking (second hand smoke) increases a non-smoking adult's risk of certain medical conditions."				
• Lung cancer		92	93	90
• Bronchitis		84	86	82
• Diabetes		53	62	45
• Heart disease		61	69	54
• Asthma		81	82	80
For which conditions is the following statement true? "Passive smoking (second hand smoke) increases a child's risk of certain medical conditions."				
• Chest infection		89	92	86
• Cot death		74	79	70
• Diabetes		47	58	39
• Glue ear		18	24	14
• Asthma		87	91	83
Those who smoke regularly and die of a smoking related disease lose a number of years from their life expectancy compared to non-smokers. About how many years, on average, do they lose?				
• 5 years	✗			
• 10 years	✗			
• 15 years	✗			
• >15 years	✓	9	12	6
Among smokers who get lung cancer, how likely are women to develop the most deadly form of the disease, compared to men?				
• Half as likely as men	✗			
• Just as likely as men	✗			
• Twice as likely as men	✓	31	35	27
Babies born to mothers who smoker during pregnancy are, on average:				
• About 200 grams (8 ounces) *lighter* than babies born to non-smoking mothers	✓	97	96	98
• About the *same* weight as babies born to non-smoking mothers	✗			
• About 200 grams (8 ounces) *heavier* than babies born to non-smoking mothers	✗			

Just under a quarter reported that there were smokers other than themselves in their current household, although this differed significantly between nurses (33%) and teachers (16%). Furthermore, 63% reported that their father, 40% that their mother, 10% that a brother or brothers, and 7% that a sister or sisters smoked whilst growing up. Significantly more nurses than teachers had a father, mother or brother who smoked whilst in their childhood home.

Current Smokers

Of the current smokers, 83% engage in the habit on a regular basis with the remainder stating that they smoke only occasionally. The majority of women smoked branded cigarettes, as opposed to rolled cigarettes, cigars, or pipes. The number of cigarettes smoked daily varied widely among respondents from a low of one to a high of 60, with the average being 15. More than half started smoking before the age of 16 with the majority (81%) commencing the habit before the age of 18.

The place where women do the majority of their smoking is in their homes, followed by pubs/clubs/bars, cafes and restaurants, the workplace, their car, and outside (Table 6.11). Nurses were more likely to smoke at home, at work, and outside, whereas teachers were more likely to smoke in their car.

Of those respondents who do smoke at their workplace, 72% do so with others while 22% smoke on their own (6% of those who smoke at their workplace did not answer this question). On a day off work, half smoke more cigarettes, 20% smoke fewer cigarettes, and 30% report smoking about the same number.

The most common reason for smoking is that it helps with relaxation, followed by reasons of enjoying the taste, smoking being a sociable activity, and one that aids concentration (Table 6.12). More nurses than teachers cited the first three reasons for smoking, while teachers were more likely to smoke because they felt it aided their concentration. Enjoying the sensation of smoking and the perception that it helps

with weight control were also noted as reasons for smoking, although to a lesser degree.

TABLE 6.11: PLACES WHERE WOMEN SMOKE

	CHECKED OFF AS ONE PLACE WHERE RESPONDENT SMOKES[a] N (%)			CHECKED OFF AS PLACE WHERE MOST OF RESPONDENT'S SMOKING OCCURS N (%)		
	ALL	NURSES ONLY	TEACHERS ONLY	ALL	NURSES ONLY	TEACHERS ONLY
Home	149 (90)	122 (92)	27 (79)	100 (60)	78 (60)	22 (64)
In pubs, clubs, or bars	128 (77)	102 (77)	26 (76)	33 (20)	27 (20)	6 (18)
In cafes or restaurants	105 (63)	84 (64)	(21 (62)	2 (<1)	2 (2)	0 (0)
Workplace	98 (59)	83 (63)	15 (44)	10 (6)	8 (6)	2 (3)
In car	87 (52)	65 (49)	22 (65)	4 (2)	2 (2)	2 (2)
Outside	66 (40)	54 (41)	12 (35)	5 (3)	4 (3)	1 (3)
Other places	39 (24)	32 (24)	7 (21)	2 (1)	2 (2)	0 (0)
Public transport	25 (15)	22 (2)	3 (<1)	1 (<1)	1 (<1)	0 (0)

[a]Some respondents did not rank reasons as the questionnaire requested, with some choosing only a few reasons or all but not ordering them by importance.

TABLE 6.12: REASONS FOR SMOKING

	CHECKED OFF AS ONE REASON[A] N (%)			CHECKED OFF AS MOST IMPORTANT REASON N (%)		
	ALL	NURSES ONLY	TEACHERS ONLY	ALL	NURSES ONLY	TEACHERS ONLY
Smoking helps with relaxation	129 (78)	106 (80)	24 (71)	52 (31)	41 (31)	11 (32)
Enjoy the taste of smoking	95 (57)	80 (61)	16 (47)	34 (21)	29 (22)	5 (15)
Smoking is a sociable activity	65 (39)	57 (43)	11 (32)	17 (10)	14 (11)	6 (18)
Smoking aids concentration	64 (39)	48 (36)	17 (50)	2 (1)	2 (2)	0 (0)
Smoking helps with weight control	47 (28)	41 (31)	7 (21)	4 (2)	4 (3)	0 (0)
Enjoy the sensation of smoking	46 (28)	38 (29)	8 (24)	2 (1)	1 (<1)	1 (3)

[a]Some respondents did not rank reasons as the questionnaire requested, with some choosing only a few reasons or all but not ordering them by importance.

Approximately 86% of smokers have tried quitting in the past, with 88% planning on quitting in the next 12 months or at some point in the future. Most smokers have at some point felt pressurised by certain people to quit smoking – usually spouse/partner or other family members (Table 6.13). About 40% also report feeling pressurised by workplace policy, with friends and colleagues evidently also sources of pressure. Less than 20% report feeling pressurised by the government to quit.

There were some differences between nurses and teachers with the latter more likely to feel pressurised by friends and colleagues to quit smoking. Nurses on the other hand were more likely to report feeling pressurised by their workplace smoking policy to quit.

TABLE 6.13: HAVE EVER FELT PRESSURISED BY THE FOLLOWING TO QUIT SMOKING

	n (%)		
	ALL	NURSES ONLY	TEACHERS ONLY
Family members other than partner or spouse	88 (53)	69 (52)	19 (56)
Workplace policy	67 (40)	57 (43)	10 (29)
Partner or spouse	42 (25)	34 (26)	8 (24)
Friends	38 (23)	26 (20)	12 (35)
Colleagues	37 (22)	27 (20)	10 (29)
Government	31 (19)	24 (18)	7 (21)

The most common reasons for not quitting (Table 6.14) are that it is too difficult and that smoking is enjoyable. Concern that one would put on weight if they quit smoking was noted by about 30% of women, while nearly the same number report that people smoking around them makes it too difficult to quit. Some women reported a lack of support from family and friends in attempting to quit. Finally, nearly 10% feel there is no need for them to quit. Nurses and teachers had quite similar reasons for not quitting.

TABLE 6.14: REASONS FOR NOT QUITTING SMOKING

	n (%)		
	ALL	NURSES ONLY	TEACHERS ONLY
Have found it too difficult to quit	103 (62)	83 (63)	20 (59)
Enjoy smoking	80 (48)	65 (49)	15 (44)
Am worried I would put on weight	52 (31)	43 (33)	9 (26)
People smoking around me makes it difficult to quit	45 (27)	35 (27)	10 (29)
Feel there is no need	15 (9)	12 (9)	3 (9)
Not enough support from family/friends	8 (5)	6 (5)	2 (6)
Have never considered quitting	7 (4)	6 (5)	1 (3)
Not enough support at work	4 (2)	4 (3)	0 (0)

Ex-smokers

The most important reason for quitting smoking was concern for one's personal health, followed closely by concern for the health of others (Table 6.15). Over half cited the cost of smoking as a deterrent. Feeling pressurised by friends and family to quit was also important in the decision to quit. About one-quarter of respondents reported that advice from a doctor or nurse was instrumental in their decision to quit (although it was not the most important reason for either nurses or teachers), with a similar number stating that workplace no-smoking policies played a part in the quitting process. Just fewer than 20% reported quitting due to a special scheme or group to quit smoking.

TABLE 6.15: REASONS FOR QUITTING

	CHECKED OFF AS ONE REASON[A] N (%)			CHECKED OFF AS MOST IMPORTANT REASON N (%)		
	ALL	NURSES ONLY	TEACHERS ONLY	ALL	NURSES ONLY	TEACHERS ONLY
Concern for personal health	154 (75)	71 (80)	83 (73)	86 (42)	35 (39)	51 (45)
Concern for health of others	122 (60)	52 (58)	70 (62)	28 (14)	16 (18)	12 (11)
Cost of smoking	106 (52)	47 (53)	59 (52)	11 (5)	4 (4)	7 (6)
Pressurised by family to quit	90 (44)	38 (43)	5 (46)	15 (7)	7 (8)	8 (7)
Pressurised by friends to quit	62 (30)	26 (29)	36 (32)	4 (2)	1 (1)	3 (3)
Advice from doctor or nurse	53 (26)	24 (27)	29 (26)	0 (0)	0 (0)	0 (0)
Workplace no-smoking policies	51 (25)	25 (28)	26 (23)	1 (<1)	1 (1)	0 (0)
Special scheme or group to quit smoking	37 (18)	17 (19)	20 (18)	1 (<1)	0 (0)	1 (<1)

[A]Some respondents did not rank reasons as the questionnaire requested, with some choosing only a few reasons or all but not ordering them by importance. Includes 204 ex-smokers.

The majority of ex-smokers, 161 of the 204, quit smoking on their own while 21 reported quitting with someone else (19 of the ex-smokers did not state whether they quit on their own or with someone else). Fifteen of the 21 women who quit with someone else did so with their spouse or partner, one with a co-worker and one with a friend. Time elapsed since smoking cessation ranged from one month to 34 years, with an average of 14 years.

Those Who Never Smoked

The top reason for never engaging in smoking behaviour was a dislike for the smell of cigarettes (Table 6.16). Just over 50% stated that they had never considered smoking or weren't interested in it, with a similar proportion never smoking out of concern for their personal health. Nearly 40% did not like the taste of cigarettes and just over 30% stated that they did not start smoking because they disliked the fact that one or both of their parents had. The reasons of cigarettes being too costly, having friends who did not smoke, and parental pressure not to smoke were each cited by about one-quarter of respondents.

Nurses were less likely than teachers to cite reasons of disliking the smell of cigarettes, not being interested in smoking, that none of their friends smoked and that it was too costly. They were however somewhat more likely than to have given the reason of disliking the taste of cigarettes.

TABLE 6.16: REASONS FOR NEVER SMOKING

	n (%)		
	ALL	NURSES ONLY	TEACHERS ONLY
Didn't like the smell of cigarettes	342 (63)	116 (58)	226 (66)
Never considered it/wasn't interested	285 (52)	94 (47)	191 (56)
Concern for personal health	279 (51)	87 (44)	192 (56)
Didn't like the taste of cigarettes	209 (38)	86 (43)	123 (36)
Disliked that one or both parents smoked	170 (31)	63 (32)	107 (31)
Too costly to start smoking	143 (26)	46 (23)	97 (28)
None of my friends smoked	135 (25)	36 (18)	99 (29)
Parent pressure not to smoke	133 (24)	43 (22)	90 (26)

[a]Several respondents checked several reasons. Only those who had never smoked (n=547) answered this question.

6.3 Bivariate Results

The bivariate odds (with 95% confidence intervals) of smoking, smoking by age 16, and quitting by various characteristics and indicators are presented in six tables for

all respondents. The tables include personal characteristics, current home environment characteristics, personal health characteristics, health knowledge indicators, work environment characteristics, and home environment while growing up. Similar tables are repeated with results of the same bivariate analysis carried out separately for nurses and teachers. Given the small number of smokers among teachers it was not feasible to carry out analysis on the odds of smoking before the age of 16 for this group. The following three subsections focus on the results of these tables.

6.3.1 Odds of Smoking

This section considers all respondents and the odds of being a current smoker as opposed to an ex-smoker or one who has never smoked.

Personal Characteristics

Table 6.17 shows that women aged 54 and older were about half as likely to smoke as younger women, as were married women compared to those who were single, divorced, separated or widowed. The same analysis run separately for nurses and teachers reveals somewhat different results (Table 6.18) with marital status significant for nurses only. Women who did not have a spouse/live-in partner were twice as likely to smoke as those with an employed spouse/live-in partner.

Occupation was also significantly related to smoking status with nurses more than six times as likely to smoke than teachers. Respondents with advanced education were less likely to smoke than those with basic education, although this effect

disappeared in the analysis examining nurses and teachers separately. Ethnicity, presence of children in the household, whether one's spouse/live-in partner was employed or unemployed, and length of time one has lived in Scotland were not significantly related to smoking status.

Current Home Environment Characteristics

There were several strong significant relationships between smoking status and socio-economic indicators. Women less likely to smoke were those who lived in owner-occupied housing, and whose household had two or more vehicles available for use (Table 6.19), although these associations were true for nurses only (Table 6.20). The likelihood of smoking increased with the level of area deprivation, with women living in the most deprived areas almost twice as likely to smoke as those living in the least deprived. However, this effect disappeared when nurses and teachers characteristics were analysed separately. Greater odds of smoking were also associated with having no smoking restrictions in the home and the presence of another smoker(s) in the household.

Three of the four social capital constructs were significantly related to smoking status. Lower odds of smoking were significantly related to higher scores of trust, reciprocity and identity. However, reciprocity and identity were important among nurses only, trust among teachers only, and engagement became significant among the teachers in the split analysis.

TABLE 6.17: ODDS OF SMOKING, QUITTING AND SMOKING BEFORE AGE 16 BY PERSONAL CHARACTERISTICS

	ODDS OF SMOKING		ODDS OF QUITTING		ODDS OF SMOKING BY AGE 16	
	OR	95% CI	OR	95% CI	OR	95% CI
Age						
Under 34	1.00		1.00		1.00	
35 to 44	0.72	0.46 to 1.12	**2.21***	1.18 to 4.13	0.92	0.42 to 2.05
45 to 54	0.73	0.46 to 1.15	**3.18***	1.71 to 5.91	0.46	0.20 to 1.08
54+	**0.47***	0.24 to 0.90	**5.29***	2.37 to 11.76	0.73	0.22 to 2.43
Marital Status						
Single (never married)	1.00		1.00		1.00	
Married	**0.51***	0.34 to 0.77	**2.51***	1.45 to 4.33	1.02	0.48 to 2.18
Divorced/Separated/Widowed	1.11	0.66 to 1.87	1.24	0.63 to 2.47	1.13	0.45 to 2.83
Highest Level of Education						
Basic	1.00		1.00		1.00	
Advanced	**0.32***	0.22 to 0.47	**2.41***	1.54 to 3.78	0.81	0.39 to 1.68
Occupation						
Teacher	1.00		1.00		1.00	
Nurse	**6.30***	4.19 to 9.48	**0.20***	0.12 to 0.32	1.27	0.58 to 2.80
Presence of Children in Household						
Yes	1.00		1.00		1.00	
No	1.22	0.87 to 1.71	0.95	0.63 to 1.43	**2.55***	1.35 to 4.83
Ethnicity						
White-Scottish	1.00		1.00		1.00	
White-English	0.63	0.26 to 1.52	1.26	0.44 to 3.63	1.14	0.25 to 5.30
White-Irish	0.98	0.33 to 2.95	1.05	0.28 to 3.99	3.05	0.27 to 34.40
White-Other	0.96	0.36 to 2.57	1.69	0.56 to 5.04	1.02	0.16 to 6.27
Spouse/Partner's Employment Status						
Employed	1.00		1.00		1.00	
Unemployed	1.62	0.90 to 2.90	0.93	0.47 to 1.82	1.45	0.74 to 2.87
Do not have a spouse or live in partner	**1.98***	1.36 to 2.87	**0.46***	0.28 to 0.75	0.32	0.08 to 1.25
How long respondent has lived in Scotland						
Entire life	1.00		1.00		1.00	
Any other time period	0.71	0.44 to 1.14	1.43	0.81 to 2.52	1.41	0.58 to 3.41

*** p<0.05**

TABLE 6.18 :ODDS OF SMOKING, QUITTING AND SMOKING BEFORE AGE 16 BY PERSONAL CHARACTERISTICS (NURSES AND TEACHERS SEPARATE)

	ODDS OF SMOKING				ODDS OF QUITTING				ODDS OF SMOKING BY AGE 16	
	Nurses		Teachers		Nurses		Teachers		Nurses	
	OR	95% CI	OR	95% CI	OR	95% CI			OR	95% CI
Age										
Under 34	1.00		1.00		1.00		1.00		1.00	
35 to 44	0.76	0.45 to 1.26	1.71	0.46 to 6.33	2.02	0.96 to 4.23	1.13	0.25 to 5.17	1.03	0.44 to 2.41
45 to 54	0.90	0.52 to 1.56	2.22	0.62 to 7.91	**2.35***	1.10 to 5.04	1.43	0.33 to 6.22	0.58	0.23 to 1.49
54+	0.72	0.32 to 1.64	1.26	0.27 to 5.84	2.73	0.95 to 7.87	2.89	0.52 to 16.01	0.67	0.17 to 2.65
Marital Status										
Single (never married)	1.00		1.00		1.00		1.00		1.00	
Married	**0.45***	0.27 to 0.74	0.93	0.34 to 2.57	**2.90***	1.39 to 6.05	1.35	0.44 to 4.14	1.18	0.52 to 2.68
Divorced/Separated/Widowed	0.80	0.42 to 1.51	2.46	0.76 to 7.94	1.60	0.64 to 4.00	0.59	0.16 to 2.20	1.26	0.46 to 3.46
Highest Level of Education										
Basic	1.00		1.00		1.00		1.00		1.00	
Advanced	0.76	0.39 to 1.48	1.71	0.65 to 4.55	1.27	0.54 to 2.99	0.44	0.15 to 1.23	1.21	0.38 to 3.84
Presence of Children in Household										
Yes	1.00		1.00		1.00		1.00		1.00	
No	1.23	0.82 to 1.87	1.59	0.78 to 3.23	0.82	0.48 to 1.41	0.82	0.38 to 1.78	**3.21***	1.57 to 6.59
Ethnicity										
White-Scottish	1.00		1.00		1.00		1.00		1.00	
White-English	0.72	0.23 to 2.28	0.92	0.21 to 4.06	2.33	0.64 to 8.51	0.44	0.07 to 2.73	0.97	0.16 to 6.00
White-Irish	0.93	0.24 to 3.65	1.26	0.16 to 10.10	1.55	0.31 to 7.88	0.58	0.05 to 6.63	2.90	0.26 to 32.84
White-Other	1.08	0.32 to 3.67	0.92	0.12 to 7.24	0.78	0.14 to 4.34	2.31	0.28 to 19.23	1.45	0.20 to 10.64
Spouse/Partner's Employment Status										
Employed	1.00		1.00		1.00		1.00		1.00	
Unemployed	1.63	0.78 to 3.39	2.09	0.66 to 6.56	0.68	0.27 to 1.73	0.90	0.27 to 3.06	0.30	0.08 to 1.17
Do not have a spouse or live in partner	**1.95***	1.22 to 3.11	**2.50***	1.16 to 5.37	**0.35***	0.18 to 0.69	0.45	0.19 to 1.06	0.73	0.34 to 1.55
How long respondent has lived in Scotland										
Entire life	1.00		1.00		1.00		1.00		1.00	
Any other time period	0.79	0.43 to 1.43	0.87	0.35 to 2.17	1.57	0.75 to 3.26	1.04	0.38 to 2.83	1.26	0.45 to 3.50

***p<0.05**

There was no significant relationship between engagement scores and odds of smoking. Number of people per room and length of time in current neighbourhood were also not significantly related to smoking status.

TABLE 6.19: ODDS OF SMOKING, QUITTING AND SMOKING BEFORE AGE 16 BY HOME ENVIRONMENT CHARACTERISTICS

	ODDS OF SMOKING		ODDS OF QUITTING		ODDS OF SMOKING BY AGE 16	
	OR	95% CI	OR	95% CI	OR	95% CI
Deprivation						
First quartile (least deprived)	1.00		1.00		1.00	
Second quartile	1.03	0.59 to 1.85	0.73	0.38 to 1.42	1.30	0.45 to 3.72
Third quartile	1.59	0.93 to 2.74	**0.51***	0.27 to 0.97	1.63	0.60 to 4.39
Fourth quartile (most deprived)	**1.85***	1.08 to 3.14	**0.39***	0.21 to 0.74	1.07	0.40 to 2.87
Trust						
First quartile (lowest scores)	1.00		1.00		1.00	
Second quartile	**0.53***	0.34 to 0.84	**2.00***	1.14 to 3.51	1.03	0.46 to 2.35
Third quartile	**0.62***	0.39 to 0.98	**1.85***	1.04 to 3.30	0.60	0.26 to 1.39
Fourth quartile (highest scores)	**0.50***	0.31 to 0.80	**2.13***	1.18 to 3.82	0.52	0.21 to 1.29
Reciprocity						
First quartile (lowest scores)	1.00		1.00		1.00	
Second quartile	**0.50***	0.30 to 0.82	**2.02***	1.10 to 3.69	0.58	0.22 to 1.54
Third quartile	0.72	0.47 to 1.10	1.41	0.83 to 2.39	0.72	0.34 to 1.54
Fourth quartile (highest scores)	**0.56***	0.35 to 0.91	**2.05***	1.15 to 3.67	0.75	0.31 to 1.84
Engagement						
First quartile (lowest scores)	1.00		1.00		1.00	
Second quartile	0.77	0.47 to 1.25	1.29	0.70 to 2.38	0.63	0.26 to 1.53
Third quartile	0.88	0.56 to 1.38	1.42	0.81 to 2.49	0.52	0.22 to 1.19
Fourth quartile (highest scores)	0.78	0.48 to 1.28	1.72	0.94 to 3.15	**0.30***	0.11 to 0.79
Identity						
First quartile (lowest scores)	1.00		1.00		1.00	
Second quartile	**0.57***	0.37 to 0.87	1.60	0.92 to 2.79	**0.27***	0.12 to 0.62
Third quartile	**0.37***	0.21 to 0.67	**3.76***	1.90 to 7.45	0.64	0.22 to 1.83
Fourth quartile (highest scores)	**0.42***	0.27 to 0.66	**2.36***	1.35 to 4.12	**0.43***	0.19 to 0.97
Cars/vans available for use						
None	1.00		1.00		1.00	
One	0.54	0.29 to 1.02	2.49	0.98 to 6.33	0.97	0.33 to 2.87
Two or more	**0.34***	0.18 to 0.64	**4.05***	1.60 to 10.25	0.78	0.26 to 2.34
Time in current neighbourhood						
Five years or longer	1.00		1.00		1.00	
Less than five years	1.05	0.71 to 1.56	0.96	0.60 to 1.55	1.82	0.89 to 3.72
Tenure of housing						
Rented	1.00		1.00		1.00	
Owner-occupied	**0.36***	0.20 to 0.63	**5.72***	2.11 to 15.52	0.41	0.16 to 1.07
Smoking restrictions in home						
Partially or totally banned	1.00		1.00		1.00	
No restrictions	**2.62***	1.78 to 3.86	**0.48***	0.29 to 0.78	**3.58***	1.79 to 7.17
Presence of other smoker (s) in home						
No	1.00		1.00		1.00	
Yes	**4.56***	3.19 to 6.52	**0.02***	0.01 to 0.04	2.14	0.42 to 10.92
Number of people per room						
<1	1.00		1.00		1.00	
≥1	1.37	0.88 to 2.13	0.56	0.32 to 1.01	1.05	0.47 to 2.34

***p<0.05**

TABLE 6.20: ODDS OF SMOKING, QUITTING AND SMOKING BEFORE AGE 16 BY HOME ENVIRONMENT CHARACTERISTICS (NURSES AND TEACHERS SEPARATE)

	ODDS OF SMOKING				ODDS OF QUITTING				ODDS OF SMOKING BY AGE 16	
	Nurses		Teachers		Nurses		Teachers		Nurses	
	OR	95% CI	OR	95% CI	OR	95% CI			OR	95% CI
Deprivation										
First quartile (least deprived)	1.00		1.00		1.00		1.00		1.00	
Second quartile	0.88	0.42 to 1.86	0.75	0.26 to 2.18	1.13	0.46 to 2.82	0.80	0.25 to 2.56	1.83	0.51 to 6.57
Third quartile	1.17	0.58 to 2.36	1.09	0.39 to 3.04	0.74	0.31 to 1.80	0.69	0.23 to 2.10	2.27	0.68 to 7.53
Fourth quartile (most deprived)	1.26	0.64 to 2.50	1.07	0.37 to 3.12	0.60	0.25 to 1.44	0.62	0.19 to 2.02	1.00	0.30 to 3.32
Trust										
First quartile (lowest scores)	1.00		1.00		1.00		1.00		1.00	
Second quartile	0.71	0.41 to 1.22	0.24*	0.09 to 0.68	1.17	0.57 to 2.43	5.60*	1.78 to 1.59	0.98	0.40 to 2.42
Third quartile	0.85	0.48 to 1.51	0.34*	0.13 to 0.90	1.35	0.65 to 2.81	3.60*	1.20 to 10.84	0.52	0.20 to 1.38
Fourth quartile (highest scores)	0.74	0.41 to 1.33	0.29*	0.11 to 0.77	1.42	0.67 to 3.03	4.00*	1.34 to 11.96	0.69	0.25 to 1.86
Reciprocity										
First quartile (lowest scores)	1.00		1.00		1.00		1.00		1.00	
Second quartile	0.45*	0.25 to 0.85	0.98	0.35 to 2.72	2.08	0.95 to 4.53	1.10	0.36 to 3.41	0.81	0.28 to 2.40
Third quartile	0.76	0.45 to 1.28	1.20	0.48 to 3.00	1.21	0.60 to 2.44	0.96	0.35 to 2.66	0.91	0.39 to 2.13
Fourth quartile (highest scores)	0.61	0.34 to 1.09	0.82	0.28 to 2.37	1.88	0.89 to 3.94	1.50	0.47 to 4.78	0.89	0.89 to 2.40
Engagement										
First quartile (lowest scores)	1.00		1.00		1.00		1.00		1.00	
Second quartile	0.93	0.51 to 1.69	0.46	0.17 to 1.27	1.08	0.48 to 2.41	2.09	0.67 to 6.54	0.59	0.22 to 1.62
Third quartile	1.06	0.60 to 1.88	0.73	0.31 to 1.68	1.07	0.50 to 2.28	1.86	0.72 to 4.83	0.62	0.24 to 1.62
Fourth quartile (highest scores)	0.98	0.54 to 1.76	0.26*	0.07 to 0.96	1.49	0.69 to 3.18	4.72*	1.18 to 18.92	0.27*	0.09 to 1.79
Identity										
First quartile (lowest scores)	1.00		1.00		1.00		1.00		1.00	
Second quartile	0.63	0.37 to 1.07	0.86	0.35 to 2.10	1.84	0.90 to 3.77	0.89	0.32 to 2.48	0.26*	0.10 to 0.67
Third quartile	0.48*	0.24 to 0.98	0.36	0.09 to 1.36	3.54*	1.51 to 8.28	3.43	0.82 to 14.35	0.51	0.16 to 1.63
Fourth quartile (highest scores)	0.59	0.35 to 1.01	0.44	0.16 to 1.17	1.86	0.89 to 3.86	2.20	0.74 to 6.52	0.46	0.18 to 1.13
Number of cars/vans available for use										
None	1.00		1.00		1.00		1.00		1.00	
One	0.60	0.29 to 1.28	0.70	0.15 to 3.34	2.08	0.64 to 6.73	2.14	0.32 to 14.14	1.21	0.39 to 3.79
Two or more	0.43*	0.20 to 0.91	0.54	0.11 to 2.51	3.68*	1.14 to 11.83	2.51	0.39 to 16.24	1.02	0.31 to 3.28
Length of time in current neighbourhood										
Five years or longer	1.00		1.00		1.00		1.00		1.00	
Less than five years	0.94	0.59 to 1.51	0.96	0.40 to 2.27	1.15	0.63 to 2.10	0.96	0.37 to 2.49	1.34	0.61 to 2.95
Tenure of housing										
Rented	1.00		1.00		1.00		1.00		1.00	
Owner-occupied	0.26*	0.12 to 0.55	0.95	0.21 to 4.17	7.35*	1.67 to 32.31	1.73	0.30 to 9.87	0.54	0.20 to 1.47
Smoking restrictions in home										
Partially or totally banned	1.00		1.00		1.00		1.00		1.00	
No restrictions	2.09*	1.30 to 3.36	3.11*	1.41 to 6.89	0.49*	0.25 to 0.93	0.45	0.18 to 1.10	4.19*	1.92 to 9.15
Presence of other smoker (s) in home										
No	1.00		1.00		1.00		1.00		1.00	
Yes	2.68*	1.75 to 4.11	8.28*	3.95 to 17.32	0.62	0.36 to 1.08	0.17*	0.07 to 0.39	2.61*	1.29 to 5.30
Number of people per room										
<1	1.00		1.00		1.00		1.00		1.00	
≥1	1.01	0.49 to 2.06	0.24	0.04 to 1.40	0.81	0.42 to 1.58	2.04	0.24 to 17.31	0.75	0.21 to 2.62

*p<0.05

Personal Health Characteristics

As we would expect, there were several associations between smoking behaviour and other health behaviours and outcomes. Women who have or had a health condition exacerbated by smoking were about half as likely to smoke as those reporting no such condition (Table 6.21). Women who consumed fewer than 14 units of alcohol per week were less than half as likely to smoke as women who consumed more than this amount of alcohol, and those who perceived their diet as not very healthy were more than twice as likely to smoke as those reporting a healthy diet.

These variables retained their significant association with smoking behaviour among nurses and teachers separately, except for diet which was not significant in either group (Table 6.22). Presence of limiting long-term illness, number of exercise sessions per week and perception of body weight were not significantly associated with smoking status.

TABLE 6.21: ODDS OF SMOKING, QUITTING AND SMOKING BEFORE AGE 16 BY PERSONAL HEALTH CHARACTERISTICS

	ODDS OF SMOKING		ODDS OF QUITTING		ODDS OF SMOKING BY AGE 16	
	OR	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
Presence of limiting long term illness						
Yes	1.00		1.00		1.00	
No	0.98	0.61 to 1.57	0.78	0.45 to 1.35	0.78	0.33 to 1.86
Presence of a health condition caused or exacerbated by smoking						
No	1.00		1.00		1.00	
Yes	**0.50***	0.33 to 0.74	0.88	0.53 to 1.45	1.76	0.84 to 3.68
Perception of body weight						
About right	1.00		1.00		1.00	
Slightly or very overweight	1.09	0.77 to 1.54	0.86	0.56 to 1.31	0.93	0.49 to 1.77
Slightly or very underweight	0.99	0.44 to 2.22	0.56	0.18 to 1.68	0.84	0.18 to 3.79
Perception of diet						
As healthy as it could be	1.00		1.00		1.00	
Quite good, but could improve	1.40	0.92 to 2.14	0.61	0.37 to 1.00	1.81	0.77 to 4.25
Not very healthy	**2.36***	1.14 to 4.85	**0.31***	0.12 to 0.82	2.44	0.66 to 8.99
Exercise sessions per week						
None	1.00		1.00		1.00	
One or two	0.71	0.47 to 1.09	1.02	0.60 to 1.70	0.54	0.25 to 1.20
Three or more	0.83	0.55 to 1.26	1.05	0.64 to 1.74	0.75	0.35 to 1.60
Weekly alcohol consumption						
≥14 units	1.00		1.00		1.00	
<14 units	**0.43***	0.27 to 0.66	1.32	0.78 to 2.23	0.89	0.41 to 1.93

***p<0.05**

TABLE 6.22 :ODDS OF SMOKING, QUITTING AND SMOKING BEFORE AGE 16 BY PERSONAL CHARACTERISTICS (NURSES AND TEACHERS SEPARATE)

	ODDS OF SMOKING				ODDS OF QUITTING				ODDS OF SMOKING BY AGE 16	
	Nurses OR	95% CI	Teachers OR	95% CI	Nurses OR	95% CI	Teachers		Nurses OR	95% CI
Presence of limiting long term illness										
Yes	1.00		1.00		1.00		1.00		1.00	
No	0.93	0.52 to 1.67	1.00	0.37 to 2.68	0.94	0.44 to 1.97	0.68	0.24 to 1.97	1.00	0.37 to 2.67
Presence of a health condition caused or exacerbated by smoking										
No	1.00		1.00		1.00		1.00		1.00	
Yes	**0.50***	0.31 to 0.79	**0.40***	0.16 to 0.98	0.93	0.49 to 1.76	0.96	0.35 to 2.65	1.39	0.62 to 3.13
Perception of body weight										
About right	1.00		1.00		1.00		1.00		1.00	
Slightly or very overweight	1.10	0.72 to 1.70	0.66	0.32 to 1.38	0.94	0.54 to 1.63	1.26	0.56 to 2.83	0.75	0.36 to 1.54
Slightly or very underweight	2.39	0.74 to 7.77	0.70	0.16 to 3.18	0.23	0.03 to 1.99	0.80	0.14 to 4.50	1.17	0.22 to 6.39
Perception of diet										
As healthy as it could be	1.00		1.00		1.00		1.00		1.00	
Quite good, but could improve	1.54	0.89 to 2.66	0.77	0.36 to 1.65	0.52	0.27 to 1.02	1.14	0.49 to 2.61	1.34	0.49 to 3.66
Not very healthy	1.70	0.74 to 3.92	0.97	0.12 to 8.17	0.47	0.16 to 1.40	0.31	0.02 to 5.45	2.17	0.52 to 9/02
Number of exercise sessions per week										
None	1.00		1.00		1.00		1.00		1.00	
One or two	0.79	0.47 to 1.33	0.62	0.26 to 1.47	0.98	0.50 to 1.94	1.12	0.43 to 2.92	0.66	0.28 to 1.59
Three or more	0.78	0.47 to 1.30	0.73	0.73 to 1.75	0.98	0.51 to 1.89	1.30	0.50 to 3.37	0.70	0.30 to 1.63
Units of alcohol consumed per week										
≥14 units	1.00		1.00		1.00		1.00		1.00	
<14 units	**0.42***	0.23 to 0.75	**0.29***	0.13 to 0.68	1.53	0.73 to 3.23	1.75	0.71 to 4.35	0.89	0.37 to 2.14

***p<0.05**

Health Knowledge Indicators

The majority of questions on the health consequences of tobacco use did not have a statistically significant influence on smoking behaviour (Table 6.23). For the entire sample four individual questions were significant however. Those who answered correctly the questions on passive smoking increasing a non-smoking adult's risk of lung cancer (significant in the separate analysis for both nurses and teachers), that second hand smoke was not associated with increased risk of diabetes in children, (not significant in the separate analysis) and that female smokers were at greater risk than men for developing the most deadly form of lung cancer were more than one and a half times as likely to smoke than those who answered incorrectly (true for nurses only). Lastly, those who knew that babies born to women who smoke during pregnancy tend to weigh less than babies born to non-smoking women were less than one-third as likely to smoke than those who did not know were.

When nurses' and teachers' responses were analysed separately, the association between birth weight and smoking was only significant for the teachers (Table 16.24). Finally, although not significant in the whole-group analysis, knowing that passive smoking increases one's chances of asthma was significantly associated with lower odds of smoking for teachers.

TABLE 6.23: ODDS OF SMOKING, QUITTING AND SMOKING BEFORE AGE 16 BY CORRECT RESPONSES TO ITEMS ABOUT THE HEALTH CONSEQUENCES OF TOBACCO USE.

	ODDS OF SMOKING		ODDS OF QUITTING		ODDS OF SMOKING BY AGE 16	
	OR	95% CI	OR	95% CI	OR	95% CI
For which conditions is the following statement true?[c] "Passive smoking (second hand smoke) increases a non-smoking adult's risk of certain medical conditions."						
• Lung cancer	**0.43***	0.26 to 0.72	1.55	0.83 to 2.93	1.09	0.44 to 2.69
• Bronchitis	0.85	0.54 to 1.31	1.03	0.60 to 1.76	0.63	0.44 to 2.65
• Diabetes	1.12	0.80 to 1.57	1.00	0.66 to 1.51	**0.38***	0.28 to 1.39
• Heart disease	1.14	0.81 to 1.62	0.73	0.48 to 1.11	1.04	0.20 to 0.71
• Asthma	0.74	0.74 to 1.11	1.30	0.79 to 2.14	1.06	0.51 to 2.23
For which conditions is the following statement true?[c] "Passive smoking (second hand smoke) increases a child's risk of certain medical conditions."						
• Chest infection	1.09	0.63 to 1.89	0.90	0.46 to 1.74	0.75	0.27 to 2.04
• Cot death	0.88	0.61 to 1.29	1.04	0.66 to 1.64	0.91	0.46 to 1.83
• Diabetes	**1.44***	1.03 to 2.02	0.76	0.51 to 1.15	**0.48***	0.26 to 0.91
• Glue ear	0.84	0.54 to 1.32	1.29	0.76 to 2.21	0.84	0.36 to 1.96
• Asthma	1.01	0.61 to 1.65	0.82	0.46 to 1.48	0.73	0.29 to 1.81
Those who smoke regularly and die of a smoking related disease lose a number of years from their life expectancy compared to non-smokers. About how many years, on average, do they lose?	1.16	0.66 to 2.04	0.70	0.34 to 1.44	**4.06***	1.36 to 12.13
Among smokers who get lung cancer, how likely are women to develop the most deadly form of the disease, compared to men?	**1.66***	1.17 to 2.35	0.68	0.44 to 1.04	1.18	0.63 to 2.23
Babies born to mothers who smoke during pregnancy are, on average…(lighter, the same weight, or heavier) than babies born to non-smoking mothers.	**0.26***	0.12 to 0.57	2.19	0.84 to 5.70	0.46	0.14 to 1.52

***p<0.05**

TABLE 6.24: ODDS OF SMOKING, QUITTING AND SMOKING BEFORE AGE 16 BY CORRECT RESPONSES TO ITEMS ABOUT THE HEALTH CONSEQUENCES OF TOBACCO USE. (NURSES AND TEACHERS SEPARATE)

	ODDS OF SMOKING				ODDS OF QUITTING				ODDS OF SMOKING BY AGE 16	
	Nurses OR	95% CI	Teachers OR	95% CI	Nurses OR	95% CI	Teachers		Nurses OR	95% CI
For which conditions is the following statement true? "Passive smoking (second hand smoke) increases a non-smoking adult's risk of certain medical conditions."										
• Lung cancer	**0.31***	0.14 to 0.68	**0.29***	0.12 to 0.69	2.35	0.83 to 6.67	2.09	0.80 to 5.48	0.70	0.24 to 1.98
• Bronchitis	0.82	0.46 to 1.46	0.56	0.25 to 1.24	1.55	0.69 to 3.43	1.03	0.49 to 2.15	0.49	0.19 to 1.25
• Diabetes	0.88	0.58 to 1.34	0.69	0.33 to 1.43	1.26	0.73 to 2.19	1.55	0.69 to 3.44	**0.42***	0.21 to 0.85
• Heart disease	0.81	0.52 to 1.26	1.01	0.50 to 2.05	1.09	0.62 to 1.93	0.74	0.34 to 1.60	0.92	0.45 to 1.89
• Asthma	0.83	0.49 to 1.39	**0.42***	0.20 to 0.88	1.11	0.56 to 2.18	**2.36***		1.07	0.45 to 2.53
For which conditions is the following statement true? "Passive smoking (second hand smoke) increases a child's risk of certain medical conditions."										
• Chest infection	0.90	0.42 to 1.92	0.69	0.27 to 1.74	1.08	0.40 to 2.90	1.35	0.48 to 3.78	0.86	0.25 to 2.98
• Cot death	0.79	0.48 to 1.30	0.49	0.24 to 1.00	1.15	0.60 to 2.20	1.78	0.81 to 3.93	1.01	0.45 to 2.28
• Diabetes	1.23	0.81 to 1.86	0.68	0.32 to 1.46	0.82	0.48 to 1.41	1.64	0.71 to 3.76	0.51	0.25 to 1 03
• Glue ear	0.72	0.43 to 1.19	0.18	0.02 to 1.36	1.74	0.93 to 3.23	4.52	0.57 to 35.76	0.68	0.28 to 1.65
• Asthma	0.90	0.45 to 1.81	0.51	0.23 to 1.15	0.88	0.37 to 2.10	1.55	0.63 to 3.80	0.83	0.26 to 2.63
Those who smoke regularly and die of a smoking related disease lose a number of years from their life expectancy compared to non-smokers. About how many years, on average, do they lose?	0.69	0.35 to 1.33	2.20	0.72 to 6.72	1.14	0.48 to 2.72	0.34	0.08 to 1.33	**3.49***	1.02 to 11.99
Among smokers who get lung cancer, how likely are women to develop the most deadly form of the disease, compared to men?	**1.54***	1.01 to 2.35	1.38	0.65 to 2.92	0.77	0.44 to 1.34	0.76	0.33 to 1.74	1.18	0.58 to 2.37
Babies born to mothers who smoker during pregnancy are, on average, (lighter, the same weight, or heavier) than babies born to non-smoking mothers.	0.28	0.06 to 1.35	**0.30***	0.11 to 0.81	1.77	0.54 to 5.82	2.37	0.38 to 14.79	0.46	0.12 to 1.70

**p<0.05

Work Environment Characteristics

Those who worked part-time were significantly less likely to smoke than those who worked full-time (Table 6.25). Greater likelihood of smoking was associated with believing that not all smokers complied with the workplace smoking policy. The odds of smoking had a positive relationship with length of time at current workplace. In the analysis conducted with nurses and teachers in separate groups, no variables had significant associations with smoking for teachers (Table 16.26). Among nurses the relationships between smoking and working part-time, and smoking and length of time at current workplace, mentioned above, remained.

All social capital constructs in the workplace had mainly positive relationships with smoking behaviour with higher scores associated with greater odds of smoking. However, the only statistically significant relationship was for the third quartile of trust scores, and this relationship was not present in the separate analysis for either nurses or teachers.

Whether or not smoking was allowed at work, being satisfied with one's control over their job, and having suffered work-related stress were not significantly associated with smoking status.

TABLE 6.25: ODDS OF SMOKING, QUITTING AND SMOKING BEFORE AGE 16 BY WORK ENVIRONMENT CHARACTERISTICS.

	ODDS OF SMOKING		ODDS OF QUITTING		ODDS OF SMOKING BY AGE 16	
	OR	95% CI	OR	95% CI	OR	95% CI
Trust in the workplace						
First quartile (lowest scores)	1.00		1.00		1.00	
Second quartile	1.10	0.66 to 1.82	0.93	0.51 to 1.71	**0.28***	0.10 to 0.77
Third quartile	**1.06***	1.01 to 1.63	0.82	0.49 to 1.38	0.47	0.22 to 1.03
Fourth quartile (highest scores)	0.89	0.55 to 1.45	0.89	0.49 to 1.61	0.47	0.19 to 1.17
Reciprocity in the workplace						
First quartile (lowest scores)	1.00		1.00		1.00	
Second quartile	1.16	0.69 to 1.97	0.87	0.47 to 1.62	**0.19***	0.07 to 0.55
Third quartile	1.32	0.82 to 2.13	0.62	0.35 to 1.10	**0.34***	0.13 to 0.85
Fourth quartile (highest scores)	1.03	0.57 to 1.87	0.80	0.39 to 1.63	**0.31**	0.10 to 0.96
Work-related Engagement						
First quartile (lowest scores)	1.00		1.00		1.00	
Second quartile	[xi]					
Third quartile	1.28	0.88 to 1.86	0.76	0.48 to 1.20	0.91	0.45 to 1.82
Fourth quartile (highest scores)	0.84	0.50 to 1.39	0.80	0.43 to 1.51	1.58	0.61 to 4.09
Identity in the workplace						
First quartile (lowest scores)	1.00		1.00		1.00	
Second quartile	1.23	0.80 to 2.06	0.67	0.38 to 1.18	0.66	0.27 to 1.60
Third quartile	1.18	0.67 to 2.08	0.73	0.37 to 1.42	0.59	0.20 to 1.73
Fourth quartile (highest scores)	1.36	0.80 to 2.31	**0.52***	0.27 to 0.99	0.68	0.26 to 1.78
Smoking policy at work						
Smoking is not allowed	1.00		1.00		1.00	
Smoking is allowed	0.91	0.65 to 1.29	1.13	0.74 to 1.71	0.89	0.47 to 1.68
Do you think all smokers comply with work smoking policy?						
Yes	1.00		1.00		1.00	
No	**2.72***	1.92 to 3.84	**0.42***	0.28 to 0.64	1.25	0.66 to 2.36
Satisfied with control over job						
Disagree	1.00		1.00		1.00	
Agree	0.72	0.51 to 1.02	1.42	0.92 to 2.20	0.87	0.46 to 1.66
Have suffered work-related stress						
Disagree						
Agree	1.00		1.00		1.00	
	0.96	0.67 to 1.38	1.02	0.66 to 1.58	1.21	0.62 to 2.35
Full vs. part-time work						
Full-time	1.00		1.00		1.00	
Part-time	**0.61***	0.40 to 0.95	**1.73***	1.04 to 2.88	0.46	0.19 to 1.11
Years at current workplace						
<1	1.00		1.00		1.00	
1 to 5	**2.27***	1.05 to 4.91	0.52	0.21 to 1.28	0.32	0.06 to 1.77
6 to 10	**2.46***	1.14 to 5.32	0.48	0.20 to 1.19	0.19	0.03 to 1.05
>10	**2.53***	1.22 to 5.23	0.54	0.23 to 1.24	0.19	0.04 to 1.02

***p<0.05**

TABLE 6.26: ODDS OF SMOKING, QUITTING AND SMOKING BEFORE AGE 16 BY WORK ENVIRONMENT CHARACTERISTICS. (NURSES AND TEACHERS SEPARATE)

	ODDS OF SMOKING				ODDS OF QUITTING				ODDS OF SMOKING BY AGE 16	
	Nurses OR	95% CI	Teachers OR	95% CI	Nurses OR	95% CI	Teachers		Nurses OR	95% CI
Trust in the workplace										
First quartile (lowest scores)	1.00		1.00		1.00		1.00		1.00	
Second quartile	1.16	0.64 to 2.19	0.66	0.17 to 2.50	1.11	0.53 to 2.36	1.23	0.29 to 5.14	0.30*	0.10 to 0.89
Third quartile	0.83	0.49 to 1.39	1.75	0.73 to 4.19	0.97	0.49 to 1.92	0.53	0.20 to 1.38	0.45	0.19 to 1.09
Fourth quartile (highest scores)	1.07	0.59 to 1.95	0.85	0.29 to 2.47	0.78	0.35 to 1.74	0.92	0.29 to 1.74	0.57	0.21 to 1.55
Reciprocity in the workplace										
First quartile (lowest scores)	1.00		1.00		1.00		1.00		1.00	
Second quartile	1.24	0.66 to 2.33	0.94	0.28 to 3.18	0.75	0.34 to 1.65	1.16	0.32 to 4.26	0.21*	0.07 to 0.70
Third quartile	1.09	0.61 to 1.95	1.89	0.67 to 5.29	0.64	0.31 to 1.33	0.47	0.16 to 1.49	0.31*	0.11 to 0.89
Fourth quartile (highest scores)	1.30	0.63 to 2.70	0.86	0.22 to 3.30	0.66	0.26 to 1.66	0.98	0.23 to 4.18	0.27*	0.08 to 0.93
Work-related Engagement										
First quartile (lowest scores)	1.00 [xii]		1.00		1.00		1.00		1.00	
Second quartile										
Third quartile	1.19	0.75 to 1.88	1.07	0.48 to 2.37	0.88	0.49 to 1.59	0.84	0.35 to 2.01	0.73	0.34 to 1.57
Fourth quartile (highest scores)	0.81	0.43 to 1.51	0.90	0.33 to 2.46	0.81	0.34 to 1.89	0.77	0.25 to 2.35	1.35	0.45 to 3.99
Identity in the workplace										
First quartile (lowest scores)	1.00		1.00		1.00		1.00		1.00	
Second quartile	1.35	0.76 to 2.39	1.22	0.45 to 3.28	0.61	0.30 to 1.24	0.74	0.25 to 2.17	0.62	0.23 to 1.68
Third quartile	1.23	0.63 to 2.41	0.84	0.23 to 3.08	0.72	0.31 to 1.66	0.98	0.24 to 4.00	0.50	0.15 to 1.62
Fourth quartile (highest scores)	1.74	0.91 to 3.35	1.17	0.39 to 3.50	0.37*	0.15 to 0.89	0.66	0.20 to 2.20	0.48	0.16 to 1.43
Smoking policy at work										
Smoking is not allowed	1.00		1.00		1.00		1.00		1.00	
Smoking is allowed	0.99	0.65 to 1.51	1.57	0.76 to 3.25	0.92	0.53 to 1.61	0.75	0.34 to 1.66	0.95	0.46 to 1.94
Do you think all smokers comply with work smoking policy?										
Yes	1.00		1.00		1.00		1.00		1.00	
No	1.42	0.93 to 2.19	1.38	0.58 to 3.32	0.67	0.39 to 1.17	0.85	0.33 to 2.23	1.13	0.54 to 2.36
Satisfied with control over job										
Disagree	1.00		1.00		1.00		1.00		1.00	
Agree	0.61*	0.39 to 0.94	0.83	0.39 to 1.73	1.31	0.74 to 2.30	1.53	0.67 to 3.50	0.99	0.49 to 2.00
Have suffered work-related stress										
Disagree	1.00		1.00		1.00		1.00		1.00	
Agree	1.01	0.66 to 1.55	1.52	0.64 to 3.60	1.02	0.58 to 1.78	0.65	0.26 to 1.66	1.21	0.59 to 2.49
Full vs. part-time work										
Full-time	1.00		1.00		1.00		1.00		1.00	
Part-time	0.49*	0.29 to 0.82	0.90	0.38 to 2.14	2.32*	1.22 to 4.39	1.09	0.42 to 2.81	0.54	0.21 to 1.43
Years at current workplace										
<1	1.00		1.00		1.00		1.00		1.00	
1 to 5	1.53	0.55 to 4.23	1.79	0.46 to 6.99	0.63	0.18 to 2.25	0.67	0.15 to 2.94	0.30	0.03 to 3.04
6 to 10	1.64	0.59 to 4.53	2.12	0.55 to 8.10	0.60	0.17 to 2.14	0.57	0.13 to 2.47	0.13	0.01 to 1.34
>10	1.40	0.53 to 3.65	1.76	0.48 to 6.41	0.69	0.21 to 2.26	0.86	0.21 to 3.47	0.15	0.02 to 1.37

*p<0.05

Home Environment While Growing Up

Women who reported that no one in their house smoked while growing up were significantly less likely to be current smokers (Table 6.27). However, women whose mother smoked were one and a half times as likely to smoke as those whose mother did not smoke, while having a sister(s) who smoked was associated with more than double the odds of smoking compared to those without a sister(s) who smoked. Having an unemployed head of household while growing up was associated with odds of smoking double those of someone with an employed head of household. However, the analysis conducted separately for nurses and teachers reveals that only one of these variables retained its significant relationship for smoking behaviour and, furthermore, that it was for nurses only. That is, nurses that had a sister who smoked while growing up were nearly three times as likely to smoke than those who did not have a sister who smoked (Table 6.28).

One's father or brother(s) smoking were not significantly related to being a current smoker. Neither was the number of cars/vans available for use, overcrowding, area deprivation, any of the four social capital construct scores or smoking restrictions in the home.

TABLE 6.27: ODDS OF SMOKING, QUITTING AND SMOKING BEFORE AGE 16 BY HOME ENVIRONMENT CHARACTERISTICS WHILE GROWING UP.

	ODDS OF SMOKING		ODDS OF QUITTING		ODDS OF SMOKING BY AGE 16	
	OR	95% CI	OR	95% CI	OR	95% CI
Area deprivation						
First quartile (least deprived)	1.00		1.001.		1.00	
Second quartile	1.30	0.69 to 2.47	10	0.51 to 2.37	1.63	0.49 to 5.34
Third quartile	1.41	0.75 to 2.64	0.91	0.42 to 1.96	1.30	0.41 to 4.16
Fourth quartile (most deprived)	1.51	0.81 to 2.83	0.69	0.31 to 1.51	0.63	0.19 to 2.13
Trust						
First quartile (lowest scores)	1.00		1.00		1.00	
Second quartile	1.21	0.72 to 2.02	0.59	0.31 to 1.13	0.48	0.18 to 1.26
Third quartile	1.40	0.78 to 2.51	0.82	0.41 to 1.66	0.81	0.28 to 2.37
Fourth quartile (highest scores)	1.45	0.92 to 2.30	0.87	0.51 to 1.51	0.52	0.22 to 1.20
Reciprocity						
First quartile (lowest scores)	1.00		1.00		1.00	
Second quartile	0.93	0.55 to 1.56	1.02	0.54 to 1.93	**0.21***	0.07 to 0.61
Third quartile	1.14	0.69 to 1.90	0.73	0.38 to 1.39	0.42	0.17 to 1.08
Fourth quartile (highest scores)	1.12	0.74 to 1.71	1.05	0.63 to 1.76	0.53	0.24 to 1.15
Engagement						
First quartile (lowest scores)	1.00		1.00		1.00	
Second quartile	0.66	0.37 to 1.17	0.96	0.48 to 1.93	0.61	0.22 to 1.72
Third quartile	0.69	0.40 to 1.17	1.28	0.68 to 2.41	0.77	0.29 to 2.02
Fourth quartile (highest scores)	0.87	0.50 to 1.51	0.86	0.44 to 1.69	0.53	0.20 to 1.46
Identity						
First quartile (lowest scores)	1.00		1.00		1.00	
Second quartile	0.93	0.55 to 1.56	1.02	0.54 to 1.93	**0.21***	0.07 to 0.61
Third quartile	1.14	0.67 to 1.90	0.73	0.38 to 1.39	0.42	0.17 to 1.08
Fourth quartile (highest scores)	1.12	0.74 to 1.71	1.05	0.63 to 1.76	0.53	0.24 to 1.15
Head of household's employment status						
Employed	1.00		1.00		1.00	
Unemployed	**1.96***	1.00 to 3.83	0.81	0.37 to 1.81	2.45	0.77 to 7.86
Cars/vans available for use						
None	1.00		1.00		1.00	
One or more	0.71	0.49 to 1.02	1.22	0.78 to 1.91	1.17	0.60 to 2.28
Smoking restrictions in home						
Partially or totally banned	1.00		1.00		1.00	
No restrictions	0.96	0.67 to 1.34	1.40	0.90 to 2.17	1.09	0.57 to 2.09
Presence of other smoker(s) in home	1.00		1.00		1.00	
Yes	**0.56***	0.37 to 0.87	1.22	0.72 to 2.07	0.68	0.30 to 1.57
No						
Father smoked						
No	1.00		1.00		1.00	
Yes	1.18	0.83 to 1.68	0.88	0.57 to 1.35	0.81	0.42 to 1.56
Mother smoked						
No	1.00		1.00		1.00	
Yes	**1.44***	1.03 to 2.02	0.74	0.49 to 1.12	1.03	0.55 to 1.93
Brother(s) smoked						
No	1.00		1.00		1.00	
Yes	1.56	0.94 to 2.59	0.87	0.47 to 1.59	**2.97***	1.17 to 7.55
Sister(s) smoked						
No	1.00		1.00		1.00	
Yes	**2.65***	1.54 to 4.53	**0.39***	0.19 to 0.81	1.73	0.71 to 4.18
Number of people per room						
<1	1.00		1.00		1.00	
≥1	1.18	0.81 to 1.70	0.85	0.54 to 1.33	0.86	0.44 to 1.69

***p<0.05**

TABLE 6.28: ODDS OF SMOKING, QUITTING AND SMOKING BEFORE AGE 16 BY HOME ENVIRONMENT CHARACTERISTICS WHILE GROWING UP (NURSES AND TEACHERS SEPARATE)

	ODDS OF SMOKING				ODDS OF QUITTING				ODDS OF SMOKING BY AGE 16	
	Nurses		Teachers		Nurses		Teachers		Nurses	
	OR	95% CI	OR	95% CI	OR	95% CI			OR	95% CI
Area deprivation										
First quartile (least deprived)	1.00		1.00		1.00		1.00		1.00	
Second quartile	1.05	0.46 to 2.37	1.02	0.30 to 3.49	1.49	0.50 to 4.39	1.26	0.33 to 4.84	1.33	0.34 to 5.27
Third quartile	0.99	0.44 to 2.22	1.32	0.41 to 4.26	0.83	0.26 to 2.63	1.21	0.34 to 4.37	1.21	0.31 to 4.73
Fourth quartile (most deprived)	1.36	0.60 to 3.04	1.01	0.30 to 3.44	0.99	0.33 to 2.98	0.82	0.21 to 3.27	0.62	0.16 to 2.49
Trust										
First quartile (lowest scores)	1.00		1.00		1.00		1.00		1.00	
Second quartile	1.61	0.85 to 3.08	0.98	0.36 to 2.62	0.43	0.18 to 1.04	0.78	0.25 to 2.38	0.34	0.11 to 1.05
Third quartile	1.89	0.92 to 3.89	0.83	0.24 to 2.86	0.68	0.28 to 1.67	1.33	0.34 to 5.18	0.71	0.22 to 2.36
Fourth quartile (highest scores)	1.54	0.88 to 2.68	1.02	0.40 to 2.58	0.73	0.36 to 1.46	1.39	0.50 to 3.85	0.44	0.17 to 1.16
Reciprocity										
First quartile (lowest scores)	1.00		1.00		1.00		1.00		1.00	
Second quartile	1.15	0.61 to 2.19	0.68	0.23 to 2.01	0.64	0.27 to 1.54	1.69	0.51 to 5.54	0.26*	0.08 to 0.83
Third quartile	1.32	0.70 to 2.52	1.05	0.39 to 2.81	0.67	0.29 to 1.58	0.79	0.25 to 2.44	0.40	0.13 to 1.19
Fourth quartile (highest scores)	1.06	0.64 to 1.78	0.88	0.36 to 2.15	0.95	0.50 to 1.83	1.50	0.57 to 3.99	0.54	0.23 to 1.30
Engagement										
First quartile (lowest scores)	1.00		1.00		1.00		1.00		1.00	
Second quartile	0.66	0.33 to 1.32	0.77	0.22 to 2.77	0.86	0.36 to 2.05	0.92	0.23 to 3.78	0.50	0.16 to 1.59
Third quartile	0.67	0.35 to 1.29	1.04	0.33 to 3.31	1.02	0.46 to 2.27	1.08	0.30 to 3.83	1.05	0.36 to 3.09
Fourth quartile (highest scores)	0.97	0.50 to 1.90	0.87	0.25 to 3.02	0.73	0.31 to 1.68	0.96	0.24 to 3.80	0.52	0.17 to 1.57
Identity										
First quartile (lowest scores)	1.00		1.00		1.00		1.00		1.00	
Second quartile	1.15	0.61 to 2.19	0.68	0.23 to 2.01	0.64	0.27 to 1.54	1.69	0.51 to 5.54	0.26*	0.08 to 0.83
Third quartile	1.32	0.70 to 2.52	1.04	0.39 to 2.81	0.67	0.29 to 1.58	0.79	0.25 to 2.44	0.40	0.13 to 1.19
Fourth quartile (highest scores)	1.06	0.64 to 1.78	0.88	0.36 to 2.15	0.95	0.50 to 1.83	1.50	0.57 to 3.99	0.54	0.23 to 1.30
Head of hhld's employment status										
Employed	1.00		1.00		1.00		1.00		1.00	
Unemployed	1.30	0.58 to 2.92	3.15	0.86 to 11.56	1.39	0.54 to 3.57	0.37	0.08 to 1.75	1.39	0.38 to 5.06
Cars/vans available for use										
None	1.00		1.00		1.00		1.00		1.00	
One or more	0.71	0.45 to 1.10	0.88	0.40 to 1.96	1.46	0.81 to 2.65	0.86	0.36 to 2.04	1.37	0.65 to 2.86
Smoking restrictions in home										
Partially or totally banned	1.00		1.00		1.00		1.00		1.00	
No restrictions	0.72	0.47 to 1.10	1.41	0.65 to 3.04	1.12	0.64 to 1.96	1.38	0.58 to 3.28	0.92	0.45 to 1.88
Other smoker (s) in home										
Yes	1.00		1.00		1.00		1.00		1.00	
No	0.60	0.34 to 1.04	0.98	0.45 to 2.11	1.18	0.52 to 2.47	0.72	0.31 to 1.71	0.70	0.26 to 1.90
Father smoked										
No	1.00		1.00		1.00		1.00		1.00	
Yes	1.14	0.74 to 1.77	0.82	0.40 to 1.67	0.99	0.56 to 1.75	1.17	0.54 to 2.55	0.83	0.40 to 1.73
Mother smoked										
No	1.00		1.00		1.00		1.00		1.00	
Yes	1.22	0.81 to 1.83	1.25	0.60 to 2.57	0.90	0.53 to 1.53	0.81	0.36 to 1.80	1.08	0.54 to 2.15
Brother (s) smoked										
No	1.00		1.00		1.00		1.00		1.00	
Yes	1.05	0.58 to 1.90	1.97	0.65 to 5.96	1.28	0.62 to 2.65	0.63	0.18 to 2.18	2.44	0.88 to 6.77
Sister (s) smoked										
No	1.00		1.00		1.00		1.00		1.00	
Yes	2.87*	1.45 to 5.69	1.66	0.48 to 5.80	0.47	0.19 to 1.16	0.46	0.10 to 2.05	1.46	0.56 to 3.78
Number of people per room										
<1	1.00		1.00		1.00		1.00		1.00	
≥1	0.75	0.47 to 1.20	1.11	0.52 to 2.33	1.68	0.87 to 3.22	0.74	0.33 to 1.68	0.93	0.43 to 1.98

*p<0.05

6.3.2 Odds of Quitting

This section focuses on current smokers and ex-smokers only (n=370) and the odds of having quit smoking. Bivariate analyses were carried out for nurses and teachers as one group, and then separately.

Personal Characteristics

Several of the independent variables in this section were significantly associated with being an ex-smoker (Table 6.17). Greater odds of having quit smoking were associated with increasing age, being married, and having an advanced education. Lower odds were associated with not having a spouse or live in partner, and being a nurse. However, none of these variables were significant for teachers only (Table 6.18). For nurses, all of the significant associations mentioned above remained true, except for that involving education.

Current Home Environment Characteristics

Almost all independent variables in this category were significantly associated with being an ex-smoker (Table 6.19). Greater odds of having quit smoking were associated with higher scores for trust, reciprocity, and identity (those in the top quartile of scores about twice as likely to have quit smoking as those in the bottom quartile); household access to two or more vehicles (four times as likely to have quit than those without access to a vehicle); and housing that was owner-occupied (more than five times as likely to have quit than those in rented accommodation). Lower

odds were associated with increasing deprivation and having no home smoking restrictions, while extremely low odds (0.02) were associated with the presence of another smoker(s) in the home. Engagement scores, length of time in current neighbourhood and overcrowding were not significantly associated with odds of quitting.

Results from the separate analyses of nurses and teachers reveal marked differences between the two groups (Table 6.20). Area deprivation and reciprocity were not significant for either group. Also, greater odds of quitting were associated with household access to two or more vehicles, housing that was owner-occupied, and greater identity scores for nurses only. Lower odds of quitting with the lack of home smoking restrictions only occurred for this group as well. Likewise, certain variables were only significant for teachers. Specifically, greater odds of quitting were associated with higher scores for trust and engagement, and lower odds with the presence of other smokers in the home.

Personal Health Characteristics

Women who perceived their diet as not very healthy were less than one-third as likely to have quit smoking as those who viewed their diet as very healthy or quite good (Table 6.21). None of the other personal health variables were significantly associated with being an ex-smoker, and no variables had significant associations with quitting when examined separately for nurses and teachers.

Health Knowledge Indicators

None of the health knowledge indicators were significantly associated with having quit smoking among the entire study sample (Table 6.23). Separate analyses reveals that knowing that passive smoking increases a non-smoker's chances of developing asthma was associated with more than double the odds of quitting among teachers (Table 16.24).

Work Environment Characteristics

Among the entire study sample three work environment variables were significantly associated with having quit smoking (Table 6.25). Greater odds were associated with working part-time as opposed to full-time (significant for nurses only), and lower odds were associated with thinking that not all smokers complied with the workplace smoking policy (not significant for either nurses or teachers in separate analysis). Lower odds were also associated with higher workplace identity scores, with those in the top quartile being about half as likely to have quit smoking as those in the bottom quartile of scores (significant for nurses only).

Home Environment Whilst Growing Up

Only one of these variables was significantly associated with having quit smoking when nurses and teachers were grouped (Table 6.27). That is, not having a sister who smoked while growing up was associated with lower odds of quitting.

However, the separate analyses for nurses and teachers reveal that many of the variables are significant within each group (Table 6.28). Higher scores for trust and engagement were associated with greater odds of quitting, and lower odds with the presence of other smokers in the home for teachers only. Among nurses, greater odds of quitting were associated with higher identity scores, living in owner-occupied housing, and household access to two or more vehicles. Lower odds of quitting among nurses were associated with a lack of home smoking restrictions.

6.3.3 Odds of Smoking by the Age of 16

This section focuses on current smokers only (n=166 among nurses and teachers) and the odds of having commenced the habit before the age of 16. Only current smokers were included in this analysis since ex-smokers were not asked at what age they had started smoking. Separate analysis was carried out for nurses only, since the number of teachers who were current smokers was very low (n=34) thus making binary regression analysis unfeasible. Because the majority of smokers in the study sample were nurses, the analyses for the entire group and for nurses offered very similar results, with exceptions noted in the following text.

Personal Characteristics

Greater odds of smoking before the age of 16 were significantly associated with having no children in one's household (2.55 OR for entire sample and 3.21 OR for nurses) and no other variables in this category (Tables 6.17 and 6.18, respectively). One would not expect current characteristics to predict past behaviour but it is still of interest to examine possible relationships and determine whether past behaviour

corresponds with certain current characteristics. For instance, although not the case here, it may be that early smoking initiation predicts personal characteristics such as other health behaviours, health outcomes, or marital status.

Current Home Environment Characteristics

Greater odds of smoking by age 16 were significantly associated with having no smoking restrictions in one's current home (slightly higher for nurses than for the entire sample) (Tables 6.19 and 6.20). Lower odds were significantly associated with two of the social capital constructs – identity and engagement. Specifically, those in the second quartile of scores were less than one-third as likely and those in the top quartile less than half as likely to have smoked by age 16 as those reporting the lowest identity scores. Among nurses a significant relationship remained only for the second quartile of identity scores. Furthermore, those in the top quartile of engagement scores were less than one-third as likely as those in the bottom quartile of scores to have started smoking before age 16. None of the other home environment characteristics were significant among the entire sample, but among nurses, the presence of other smokers in the home was associated with greater odds (2.61 OR) of smoking before age 16.

Personal Health Characteristics

None of the personal health characteristics among the entire group or among nurses were significantly associated with smoking before the age of 16 (Table 6.21).

Health Knowledge Indicators

Three of the thirteen health knowledge indicators were significantly associated with smoking before the age of 16 (Table 6.23). Those who knew that passive smoking did not increase either an adult's or child's chances of developing diabetes were less than half as likely to have started smoking before the age of 16. However, those who answered correctly the question of life years lost due to smoking were more than four times as likely to have started (3.49 odds ratio for nurses only). Among nurses, these relationships remained significant except for that involving knowledge of childhood diabetes.

Work Environment Characteristics

Two of the workplace social capital constructs were significantly associated with smoking before the age of 16 among the entire study sample and nurses only, with similar odds ratios for both (Tables 6.25 and 6.26, respectively). Current smokers in the second quartile of trust scores were less than one-third as likely to have engaged in the habit before age 16, while those in the top three quartiles of reciprocity scores all had lower odds than current smokers in the bottom quartile. No other work characteristics were significantly associated with smoking before the age of 16.

Home Environment Whilst Growing Up

Presumably the most appropriate explanatory variables would be those from one's childhood and adolescence. Current smokers who had a brother(s) who smoked

whilst growing up were nearly three times as likely to have started smoking before the age of 16 than those without a brother who smoked (Table 6.27). However, this relationship was not significant among nurses only (Table 6.28). Current smokers in the second quartile of reciprocity or identity scores whilst growing up were about one-fifth as likely to smoke as those in the bottom quartile of scores for these two social capital constructs. These relationships were significant and had similar odds ratios for nurses only. No other characteristics of one's home environment while growing up were significantly associated with smoking before the age of 16.

6.4 Multivariate Results

This section provides the results of several multivariate models. The first three models produced odds ratios and 95% confidence intervals for being a current smoker as opposed to an ex-smoker or someone who has never smoked for the entire sample, teachers alone, and nurses alone. All independent variables from the bivariate analysis that had a significant association with being a current smoker for each group were included in their respective models to see if they retained their significance once the other variables were controlled for. Likewise, the same rationale was used in the other two models – one producing odds ratios and confidence intervals for having quit smoking (for the entire sample, teachers, and nurses) and the other for smoking by the age of 16 (for the entire sample and nurses).

6.4.1 Odds of Smoking

Table 6.29 summarises the results of the multivariate logistic regression analysis, listing the factors with a significant effect on the odds of being a smoker after all

factors significant in the bivariate analysis had been taken into account. Nurses were nearly five times as likely as teachers to smoke, while those who have or had a health condition caused or made worse by smoking were less than half as likely to smoke as those without such a condition. Women in owner occupied housing were less than one-third as likely to smoke as those who rented, and women with lower weekly alcohol consumption were also significantly less likely to smoke.

Greater odds of smoking were significantly associated with having no smoking restrictions at home, the presence of other smokers in the home, and having a sister(s) who smoked while growing up.

Finally, those who answered correctly the question on passive smoking increasing a non-smoking adult's risk of lung cancer were less than one-third as likely to smoke than those who answered incorrectly and those who knew that female smokers were at greater risk than men for developing the most deadly form of lung cancer were almost twice as likely to smoke than those who did not know.

Table 6.29 also shows which of these variables were significant in predicting current smoking behaviour among nurses and teachers as separate groups. The differences and similarities between the two groups with regard to odds of smoking and quitting are discussed in **Section 8.3.3** of Chapter Eight.

TABLE 6.29: ADJUSTED[A] ODDS RATIOS (OR) AND 95% CONFIDENCE INTERVALS (CI) OF CURRENT SMOKING AMONG ENTIRE SAMPLE, NURSES ALONE, AND TEACHERS ALONE[B]

	ODDS OF SMOKING[C]					
	Entire Sample		Nurses		Teachers	
	OR	95% CI	OR	95% CI	OR	95% CI
Occupation						
Teacher	1.00					
Nurse	**4.92***	2.18 to 11.10	NA		NA	
Have or had a health condition caused or exacerbated by smoking						
No	1.00		1.00		1.00	
Yes	**0.43***	0.24 to 0.76	**0.50***	0.29 to 0.86	**0.29***	0.09 to 0.88
For which conditions is the following statement true? "Passive smoking (second hand smoke) increases a non-smoking adult's risk of certain medical conditions."					**Not significant in multivariate analysis**	
• Lung cancer (answering correctly)	**0.31***	0.13 to 0.73	**0.25***	0.10 to 0.66		
Among smokers who get lung cancer, how likely are women to develop the most deadly form of the disease, compared to men?					**Not significant in bivariate analysis thus not included in this model**	
Correct answer	**1.88***	1.11 to 3.19	**1.72***	1.04 to 2.85		
Weekly alcohol consumption			**Not significant in bivariate analysis thus not included in this model**			
≥ 14 units	1.00				1.00	
< 14 units	**0.40***	0.21 to 0.77			**0.35***	0.13 to 0.96
Other smokers in current household						
No	1.00		1.00		1.00	
Yes	**5.18***	2.99 to 8.97	**3.04***	1.81 to 5.13	**11.95***	4.53 to 31.54
Smoking restrictions in current household			**Not significant in multivariate analysis**			
Partially or totally banned	1.00				1.00	
No restrictions	**2.42***	1.37 to 4.15			**2.86***	1.05 to 7.74
Spouse/Partner's Employment Status	**Not significant in multivariate analysis**		**Not significant in bivariate analysis thus not included in this model**			
Employed					1.00	
Unemployed					**6.15***	1.33 to 28.50
Do not have a spouse or live in partner					**5.28***	1.94 to 14.33
Tenure of housing					**Not significant in bivariate analysis thus not included in this model**	
Rented	1.00		1.00			
Owner-occupied	**0.29***	0.11 to 0.75	**0.24***	0.10 to 0.62		
Sister(s) who smoked while growing up					**Not significant in bivariate analysis thus not included in this model**	
No	1.00		1.00			
Yes	**2.64***	1.13 to 6.17	**2.28***	1.04 to 5.00		

[A] Each factor controlled for by all those found significant in bivariate analysis; [B] 704 cases of 917 included in the analysis; 213 cases rejected due to missing data; [C] Odds of being a smoker, as opposed to an ex-smoker or someone who has never smoked.

*p<0.05

6.4.2 Odds of Quitting

After including all the variables that were significant in the bivariate analysis, five variables retained their significant association with being an ex-smoker (Table 6.30). Nurses were one-third as likely as teachers to have quit smoking, while women in owner-occupied housing were nearly five times as likely to quit as those living in rented housing. Higher identity scores were associated with significantly higher odds, with those in the third quartile more than three times as likely to have quit as those in the bottom quartile. Lower odds of quitting were associated with the presence of other smokers and no smoking restrictions in one's current household.

TABLE 6.30: ADJUSTED[A] ODDS RATIOS (OR) AND 95% CONFIDENCE INTERVALS (CI) OF HAVING QUIT SMOKING FOR ENTIRE SAMPLE, NURSES ONLY AND TEACHERS ONLY[B]

	ODDS OF QUITTING[C]					
	Entire Sample		Nurses		Teachers	
	OR	95% CI	OR	95% CI	OR	95% CI
Occupation						
Teacher	1.00					
Nurse	**0.34***	0.13 to 0.89	NA		NA	
Trust	**Not significant in**		**Not significant in bivariate**			
First quartile (lowest scores)	**multivariate analysis**		**analysis thus not included**		1.00	
Second quartile			**in this model**		**6.16***	1.71 to 22.25
Third quartile					3.07	0.84 to 22.25
Fourth quartile (highest scores)					3.41	0.96 to 12.08
Engagement	**Not significant in bivariate**		**Not significant in bivariate**			
First quartile (lowest scores)	**analysis thus not included**		**analysis thus not included**		1.00	
Second quartile	**in this model**		**in this model**		1.82	0.46 to 7.15
Third quartile					2.02	0.66 to 6.18
Fourth quartile (highest scores)					**6.78***	1.36 to 33.88
Identity					**Not significant in bivariate**	
First quartile (lowest score)	1.00		1.00		**analysis thus not included**	
Second quartile	1.29	0.53 to 3.16	1.97	0.86 to 4.49	**in this model**	
Third quartile	**3.41***	1.16 to 10.05	**2.73***	1.05 to 7.15		
Fourth quartile (highest score)	1.69	0.55 to 5.18	0.98	0.42 to 2.30		
Identity in the workplace	**Not significant in**				**Not significant in bivariate**	
First quartile (lowest score)	**multivariate analysis**		1.00		**analysis thus not included**	
Second quartile			0.56	0.24 to 1.28	**in this model**	
Third quartile			0.72	0.27 to 1.90		
Fourth quartile (highest score)			**0.33***	0.12 to 0.87		
Full vs. part-time work	**Not significant in**				**Not significant in bivariate**	
Full-time	**multivariate analysis**		1.00		**analysis thus not included**	
Part-time			**2.14***	1.03 to 4.48	**in this model**	
Other smokers in current household			**Not significant in bivariate**			
No	1.00		**analysis thus not included**		1.00	
Yes	**0.22***	0.11 to 0.44	**in this model**		**0.16***	0.06 to 0.42
Smoking restrictions in current household			**Not significant in**		**Not significant in bivariate**	
Partially or totally banned	1.00		**multivariate analysis**		**analysis thus not included**	
No restrictions	**0.40***	0.20 to 0.82			**in this model**	
Tenure of housing			**Not significant in**		**Not significant in bivariate**	
Rented	1.00		**multivariate analysis**		**analysis thus not included**	
Owner-occupied	**4.90***	1.02 to 23.54			**in this model**	

6.4.3 Odds of Smoking by Age 16

Greater odds of smoking before the age of 16 were associated with having no children in one's household and having had a brother(s) who smoked whilst growing up (Table 6.31). Lower odds of smoking were associated with higher scores on the social capital constructs of identity, reciprocity (home environment whilst growing up), and reciprocity in the workplace.

TABLE 6.31: ADJUSTED[A] ODDS RATIOS (OR) AND 95% CONFIDENCE INTERVALS (CI) OF SMOKING BY AGE 16[B]

	ODDS OF SMOKING BY 16			
	Entire sample		Nurses	
	OR	**95% CI**	**OR**	**95% CI**
Children in household				
Yes	1.00		1.00	
No	**2.35***	1.00 to 5.53	**3.76***	1.34 to 10.59
Brother(s) who smoked whilst growing up			**Not significant in bivariate analysis thus not included in this model**	
No	1.00			
Yes	**3.55***	1.08 to 11.69		
Smoking restrictions in current household			**Not significant in multivariate analysis**	
Partially or totally banned	1.00			
No restrictions	**0.40***	0.20 to 0.82		
Other smokers in current household	**Not significant in bivariate analysis thus not included in this model**			
No			1.00	
Yes			**3.35***	1.23 to 9.16
Reciprocity (home environment whilst growing up)			**Not significant in multivariate analysis**	
First quartile (lowest score)	1.00			
Second quartile	**0.20***	0.04 to 0.93		
Third quartile	0.38	0.12 to 1.25		
Fourth quartile (highest score)	0.55	0.20 to 1.52		
Reciprocity (in the workplace)				
First quartile (lowest score)	1.00		1.00	
Second quartile	**0.13***	0.03 to 0.57	**0.14***	0.03 to 0.74
Third quartile	**0.21***	0.05 to 0.95	0.20	0.04 to 1.07
Fourth quartile (highest score)	0.29	0.05 to 1.77	0.13	0.01 to 1.22
Identity			**Not significant in multivariate analysis**	
First quartile (lowest score)	1.00			
Second quartile	**0.28***	0.09 to 0.82		
Third quartile	0.67	0.18 to 2.55		
Fourth quartile (highest score)	0.51	0.16 to 1.60		

[a] Each factor controlled for by all those found significant in bivariate analysis.
[b] 159 of 166 cases included in the analysis; 7 cases rejected due to missing data.
*p<0.05

6.5 Conclusion

This chapter has summarised the results of bivariate and multivariate analysis showing which variables are significantly associated with smoking behaviour. This behaviour was examined using three indicators: the odds of being a current smoker, the odds of having quit smoking, and, among current smokers, the odds of having commenced the habit before the age of 16. Chapter Eight discusses these results in light of previous research and describes how they add to the existing knowledge on the influence of social capital and place on health in general, and smoking behaviour in particular.

CHAPTER SEVEN - NURSES' AND TEACHERS' FEEDBACK ON QUESTIONNAIRE RESULTS

7.1 Introduction

This chapter discusses the findings of discussions held with nurses and teachers following analysis of the questionnaire results. As described in Chapter Four, I began each session with a brief overview of the research to date and the concept of social capital, followed by an explanation of how the discussion would proceed. Participants gave their views on the prevalence of and reasons for smoking among nurses and teachers in particular and women in general, in addition to the reasons behind successful and unsuccessful cessation. Although the discussions with nurses and teachers covered most of the same topics they differed slightly in that I allowed conversations to continue and flow from the comments made by participants themselves.

This chapter presents the results from nurses and teachers separately and concludes with a comparison of findings between the two. Participants are denoted as Nurses One to Three and as Teachers One to Three in order to ensure confidentiality, although in some cases they and individuals they discuss are referred to by the first initial of their name. Some of the participants' quotes have had words added in by the author; these words are in brackets and for the purpose of clarifying what the participant said. The first section details the discussion held with a group of three teachers with the second section providing an overview of discussions held with nurses.

7.2 Discussions with Teachers

Three teachers participated in the discussion. Teachers One and Two were non-smokers, and although both had tried smoking in the past, neither had ever been regular smokers. Teacher Three was an ex-smoker. Sections are provided on: smoking prevalence, reasons for smoking and how smokers are perceived, personal experiences of both smoking and means of dealing with stress.

7.2.1 Smoking Prevalence

Participants were asked to estimate smoking prevalence among female nurses and female teachers. Two guessed 60 per cent for nurses, while the third guessed between 40 and 60 per cent. One participant guessed that only 10 per cent of teachers smoked, while the other two participants guessed that smoking among teachers was around 20 to 25 per cent. When informed of the actual prevalence, 7 per cent among teachers and 31 per cent among nurses, participants initially expressed surprise that there was such a discrepancy between the two occupation groups. However, one of the teachers then said about the school where she worked:

> *"There aren't many smokers for a staff of about 100. Maybe half a dozen." (Teacher One)*

When asked why more nurses than teachers smoked the initial response was job related:

"Stress and job pressure (Teacher Two)

However, another teacher noted the social reasons behind smoking:

"I think there's a girlish thing about it as well especially when you think of the age at which they (nurses) get into it (training). It's an age when you are doing things in groups." (Teacher One)

Followed by:

"There is that peer pressure among young girls. I think there are more girls smoking now." (Teacher Two)

Teacher Three also noted an increasing prevalence of smoking among young girls:

"So do I and it's worrying. It's the smart girls as well, the type of girls that would never have smoked 10 or 15 years ago."

7.2.2 Reasons for Smoking and How Smokers are Perceived

Reasons for Smoking Initiation During Adolescence

Participants were asked why they thought some girls smoked while others did not.

"There was a lot of pressure to smoke. You were a bit of a coward if you didn't" (Teacher One)

Presumably others may have viewed a non-smoker as a coward, but:

"It takes a lot of confidence not to smoke" (Teacher Two)

I then asked how girls get this confidence, if not from smoking.

"Many of the confident girls come from families with more money. The girls are able to buy new clothes. I know even I feel more confident if I have a new outfit. So much of how the girls feel about themselves has to do with external appearance - what their clothes are like, how thin they are" (Teacher Three)

"I think a lot of these girls also are able to do things that keep them out of trouble. Their parents get them involved in so many activities and of course, you need money to do this" (Teacher One)

I then asked if they thought that girls who participate in sports and other activities were more confident and if that confidence resulted in them not being as likely to smoke as girls who do not participate to the same extent.

"I'm sure the recognition you get for participating or competing in sports has so much to do with giving girls confidence. I remember smoking when I was a teen and not wanting my teachers to see me. I did quite well at school and I didn't want to disappoint my teachers. I really felt that they thought I could do well and they expected a lot of me. I'm not sure that I would have gone on to university if it hadn't been for the encouragement of some of my teachers" (Teacher Three)

Teacher One also noted that perhaps income does not have the strong link with smoking initiation that it once had:

"I get the impression that more girls are smoking. Educating girls on the dangers of smoking is a waste of time. They know perfectly well that smoking is bad for them. It's the girls that you wouldn't expect to smoke that are now doing it; it's cutting across social class."

The issue of weight control as a reason for smoking, first noted by Teacher Three, came up again in the discussion:

"I hear girls talking about how they can't quit now because they don't want to put on weight (Teacher Two).

The attitudes of young people, perhaps best described as brash and carefree by participants, also play a large role in smoking initiation:

"I used to think smoking was a bit naff at school because it was the boys who did it behind the bike sheds. I was 18 when I started. There was the pressure to smoke. There was also the bravado of youth, 'I'll do it but I can stop whenever I want to'. I remember someone saying to me that I wouldn't just be able to stop when I wanted and of course they were right. You don't realise how addictive it is" (Teacher Three).

Another teacher noted the increased acceptability of smoking among teenage girls:

"It's in style now to smoke. The students walk down the street smoking. When I was in school the girls who smoked wouldn't have done that" (Teacher One)

Reasons for Smoking Maintenance

The conversation then moved to smoking amongst teachers rather than students. I asked about the prevalence of smoking at their workplace. Participants perceived a decrease in smoking prevalence among teachers in recent years and a change in where smoking occurs.

"I wonder if smoking has gone down amongst teachers now that they have brought in regulations that you can't smoke on the premises? Because it's so inconvenient to smoke now. At one school I was

teaching at, a lot of teachers actively tried to give up smoking because you couldn't smoke in the school and it was a long walk across the grounds to the smoking area. So these teachers spent their entire break just walking across for one fag and then walking back". (Teacher Two)

"There's a smoking room but at the other school (participant divides her working time between two schools) some of the teachers are doing what the students do - nipping out to their car for a fag" (Teacher One)

Participants were told that questionnaire results of the current study revealed that teachers who were married were less likely to smoke than those without a partner or those with an unemployed partner. I then asked their views on why they thought this was the case with responses linked mainly to stress relief and support:

"You have someone to talk to and to put things into perspective" (Teacher One)

"When I was smoking I used to mull things over with a cigarette; you sit and think and reflect" (Teacher Three)

Teacher Two disagreed with this view:

"But it (smoking) doesn't actually help you deal with things" (Teacher Two)

Teacher Three remained firm in her view and said that smoking had helped her to deal with things in the past.

How Smokers are Perceived

Asking about how smokers are viewed in the workplace revealed mixed opinions from individual participants. That is, while they seemed to attach a stigma to smoking behaviour, they expressed a certain degree of sympathy for their smoking peers. This part of the discussion also suggested that strong social networks develop among teachers who smoke:

"We don't have a smoking area on site so people go to the bus shelter across the road. (This evoked laughter from all participants). I feel pity for them. There's something quite tacky about it. It's like when I've gone to hospitals and I've seen patients with drips standing outside and having a fag" (Teacher Three)

"It's like when you go to Ninewells (hospital in Dundee) and there are all the nurses and patients outside smoking. It's like running the gauntlet. But I feel sorry for the smokers at our school. They have to fill up their coffee cup and then go into this tiny room. It's so full of smoke it really is awful. Well, I suppose to them, it's what they want.

There aren't many smokers among our staff. At the other school where there is no smoking room, those who smoke go out to their cars but it's much more awkward because you're seen by the students. And then you have to discipline students who smoke on school grounds" (Teacher One)

"I feel sorry for the smokers because it is an addiction. There really isn't an element of choice, it's something they feel they have to do" (Teacher Three).

Even though Teacher Two had initially expressed some sympathy for her smoking colleagues she disagreed with the above statement and noted that there is some enjoyment to smoking and there is choice involved:

"Look at L (a teacher known to participants One and Three). There is some pleasure at smoking. She stopped for a while and then she made a conscious decision to start again. She really missed it" (Teacher One)

Teacher Three stated that it just supported her own point in that smoking is very addictive. Teacher One was not sympathetic to smokers:

"I don't feel sorry for them at all. I've had too many experiences with passive smoking...with having to suffer people lighting cigarettes right next to me and not being asked first" (Teacher One)

This comment resulted in other participants trying to establish their views on the smoking behaviour of others and finding their balance between condemning the behaviour and yet feeling sympathetic to those engaging in the behaviour. In response to the comment above by Teacher One:

> *"Oh, I agree. It (passive smoking) is terrible. I was thinking more of these people at the bus shelter and how awful that you feel you have to go out and stand in the rain and have a fag...because you're driven by it; it's an addiction. I do agree with the non-smoking policy but I'd hate to be that addicted that I'd be leaving the building like the smokers do" (Teacher Three)*

Slight condemnation of smoking behaviour was revealed again by the following comments:

> *"The policy of the region is that if there is a space available for a smoking area then fine, but if there isn't...and a lot of schools can easily make the case that there isn't any spare room available...the school isn't obliged to provide a space. It's terrible in the one school on South Street...the staff are worse than the students. They go back to the kitchen and hang out the back door" (Teacher One)*

> *"There's a smoking area in our school and it's awful, you can really smell it" (Teacher Two)*

"Yes, in our school as well. It's worse in the evenings....if you're in there working because the cleaners go in there to smoke and they don't shut the door" (Teacher One)

The camaraderie of smokers was exemplified in the previous comments about the smokers having a cigarette together in the bus shelter or those outside of a hospital entrance (both nurses and patients). The 'geography' of smoking and the social nature of the habit are further revealed by Teacher One:

"There's a subculture of smoking, in my workplace anyway. The smokers all know each other really well because they're together all the time. There is one smoker in my department who we don't see very much because she goes out with all the other smokers from other departments. They've got a real sense of camaraderie together. They're toughing it out by walking all the way across the school to have a fag" (Teacher Two)

7.2.3 Personal Experiences of Smoking and Dealing with Stress

I then went around the table asking for each participant's experience with tobacco use. Teacher Two had tried smoking and did not like it. The main reason for starting was due to peer pressure and being drunk at parties. She stated that she:

"...felt really sick the next day, and it was more from the tobacco than the alcohol" (Teacher Two)

In addition to just not liking tobacco, another reason for her not smoking included having non-smoking friends during her teenage years and few smoking colleagues during teacher training. Furthermore, her mother and father both smoked while she was growing up and:

"...because smoking was an acceptable thing in my family, it's probably the reason I didn't smoke. It wasn't a temptation or thrill for me" (Teacher Two)

Teacher One had tried smoking due to peer pressure:

" 'Go on, have one', they (other girls) would say. And they (stores) sold them individually and I never bought any. I suppose it was kind of mean because my friends would buy them and offer them to me. Sometimes I'd take one but I never actually bought any. I just didn't like it" (Teacher Two)

Later experiences of Teacher One reveal that peer pressure is not restricted to the period of adolescence:

"In a year I've never smoked more than 20 cigarettes and the last time I smoked was in the late 70s. I think it was at a party and my

friend had these menthol cigarettes and she said 'Go on A, have one'. I did and felt so ill the next day, so did she. My head! I haven't even thought about it again after that" (Teacher One)

I then asked if her parents had smoked and she said they had.

Teacher Three was the last to give her account. She was an ex-smoker who had started at age 18:

"The bloke I was going out with smoked French cigarettes and I loved the smell of them. I didn't even like them but though I'd have a few puffs and I didn't really like them but thought I'd persevere. So I persevered with the fags because they smelled nice. I thought they should taste nice and I didn't inhale for a while. Again, it was that arrogance of youth..." (Teacher Three)

I asked Teacher Three if she had found it difficult to give up smoking:

"Oh yes, yes I did. Very difficult. I stopped cold turkey. I smoked for 5 years. I stopped because first, I didn't like the idea that I was addicted and second, it made my chest tight. That was the physical bit I didn't like. I don't know how people can chain smoke 25 or 30 cigarettes. I did stop but I can have the odd one quite happily. In times of stress in my life I have bought packs of 10 and spread them over a week. Then I've thought 'This is awful. Stop.' So in a sense

that behaviour is still there in me. I suppose it depends upon stress levels and how well I can control it" (Teacher Three)

This comment led me to ask how each of these teachers dealt with stress. Teacher Three mentioned keeping a journal and writing down what was bothering her, as well as meditating, exercising and taking a bath. She also noted that talking things through with someone else was important.

Teacher Two said that exercise was a good stress release and that she would often talk to her husband in the evening about work situations that may have caused stress.

Finally, Teacher One also mentioned talking to her spouse about her day at work. She also talked about alcohol:

"Sometimes I'll come home from work and have a drink which I sometimes regret and find quite depressing. (I asked why she found this depressing) Because it's depressing to feel the need to have a drink at that hour. It's different if it's later on in the evening. I also exercise. Well, I haven't for some time but I'm getting back into it" (Teacher One)

7.3 Discussion with Nurses

Three Nurses participated in the discussion. Nurse One was a current smoker, Nurse Two an ex-smoker, and Nurse Three had never smoked. Sections are provided on: smoking prevalence, reasons for smoking and how smokers are perceived, personal experiences of both smoking and means of dealing with stress.

7.3.1 Smoking Prevalence

When asked how many nurses and teachers smoked, one participant (the one who had never smoked) guessed 70 per cent, while the other two guessed 50 per cent. They all thought that fewer teachers smoked and guessed between 25 and 40 per cent. When informed of the figures from this study, participants were somewhat surprised that they had overestimated the prevalence of smoking in the two groups but were expecting that more nurses than teachers would be smokers.

> *"I expected that more nurses than teachers would smoke. It (nursing) is a very stressful job. It has unsociable hours. The pressures are immense for not much reward. I would think it's difficult to smoke as a teacher because they would be trying to set an example" (Nurse Three)*

In response I asked if nurses were concerned with setting an example of healthy behaviour of patients.

> *"Of course not! (All participants laughed.) Seriously, we do care about the patients and every nurse I know gives 110 per cent on the*

job but our own time is our own time. Even if it's a break during your shift. I don't smoke anymore but taking that break for a fag is what keeps you going sometime. You just need to get away from the madness and smoking is a good way to do that. But it's not only the stress at work. I found it was actually at home when I needed more of a break - from kids, housework and just a lot of other stuff happening there. Sometimes it was the only way I could sit down for 10 minutes and say 'Look, this is my time' " (Nurse Two)

7.3.2 Reasons for Smoking and How Smokers are Perceived

Reasons for Smoking

This part of the discussion dealt with the reasons why women and nurses smoke.

"Smoking is habitual for one thing. And I think it's the work stress, combined with home, stress over how they look...you know, with trying to be slim." (Nurse Three)

"I think people maintain the habit because of the nicotine addiction first and foremost. Most people don't realise how addictive nicotine is; it's like heroin. It's not recognised as well as it should be. Anti-smoking groups are too unsympathetic. It's a huge craving both physically and psychologically" (Nurse One)

"I agree that it's a strong addiction. I started smoking when I was 15 and then quit when I was 20. I didn't smoke at all then for seven years and then started again. It was quite scary how quickly I got hooked on them again. I smoked for another three months and just thought 'NO, I don't want to be a smoker'. (Nurse Two)

I asked Nurse Two why she started smoking again and why she didn't want to be a smoker.

"I had left my husband a few weeks before. I was feeling great about it. Everything was so exciting and new and different. I was round at my sister's one night with a couple of other girls and we had a great night in drinking wine and they were all smoking. After a few glasses of wine I thought, why not? Scary how much I enjoyed smoking. After that night I smoked about a pack a week for the next three months. Then I just really wanted to quit. No one at work knew I was smoking. They had always known me as a non-smoker and there is a stigma attached to smoking isn't there? Smoking just doesn't fit in with my lifestyle anymore. I exercise quite regularly and run. I just can't smoke" (Nurse Two)

Participants were told that we would revisit the issue of how smokers are perceived and if there was a stigma attached to smoking behaviour but that I would first present some findings from the questionnaire. The point was made that even though I thought work stress would be linked to smoking, it was not.

"Work stress on its own may not be linked to smoking but it's certainly a combination of home stress too. It's everything else on top of work. I think in some ways men have more workplace stress, well maybe not more, but they can't deal with it. I worry about things my husband wouldn't like finances, the laundry. Women worry more. Another thing is when women return to work after having children. They've been at home all that time with home responsibilities, then they go back to work and they still end up doing all the work at home." (Nurse Three)

"That's true. It's like your workload doubles. Somebody has to take responsibility and inevitably it's women. I mean, my husband does help out and we have a good partnership but I still will worry about things that he wouldn't even think of" (Nurse Two)

I then mentioned that housing tenure was important, with those living in rented accommodation more likely to smoke than those in owner-occupied housing. This started a discussion on the links between smoking and income.

"I can believe that. I grew up in council housing, northern housing. My posher friends in uptown houses didn't smoke. (I asked why she thought they didn't smoke). Too easy to say it's education because I don't believe that at all. You get idiots in all walks of life. Maybe it's

more stress over not having much money; you don't have that much money going around" (Nurse One)

"I don't know how people can afford to smoke" (Nurse Three)

"But you can. I remember when I was a student and smoking. You could always scrape together a couple of quid for a pack of fags. Sometimes you shared a pack with a friend and then paid only half" (Nurse Two)

"It's very ironic because my mum and dad didn't have very much money but they would find the money for fags. It did bother me not having much growing up. I used to get very jealous because everyone else had a pony and I didn't have one because we couldn't afford it. Maybe if I had a pony I wouldn't have been as interested in the fags" (Nurse One)

I next told participants that among nurses, greater identity at work was associated with lower odds of quitting and what their views were on this.

"Well, nurses smoke together and they also tend to socialise together. No one else can understand the emotional trauma you go through" (Nurse One)

"That's right and I don't think teachers' jobs are as stressful as nurses'. Looking after a bunch of kids is nothing like looking after a bunch of people who are about to die" (Nurse Two)

"The responsibility is on you. I would get so upset after becoming attached to patients and then seeing them die. The only people I could get support from are other nurses. We are a very close group. I work with nurses; I've lived with them. Nobody else would have understood" (Nurse One)

"I think there a lot of trust among us as well. And with other people, like in the community, it's instant trust. It's instant faith. They think you're the most honest person in the world and everybody loves you" (Nurse Three)

"There definitely is that trust among nurses. You know, sometimes we laugh at some very tragic things which other people would not find funny. But we have to laugh about them otherwise it would be such a depressing job (Nurse One)

How Smokers are Perceived

I then initiated a discussion of why some nurses do not smoke and how smokers and non-smokers are perceived.

"In my early days of nursing I always thought my non-smoking colleagues were nicer girls. They came from nice families. They didn't drink" (Nurse One)

"The smokers are different from the non-smokers. They're (smokers) not my cup of tea. I don't want to hang out with smokers. Nowadays it's a much bigger issue. Even when my parents gave up smoking they still let others smoke in their house. They didn't feel they could ask them not too. But no one smokes in my house. I think there is more choice now to not be around it (smoking) (Nurse Three)

"It's funny. For several years after I quit smoking I really had a holier-than-thou attitude towards other smokers. I think I almost saw them as weak. It's such a disgusting habit and I thought if I can quit so can you. I'm better now though and try not to be judgmental. But at times when I used to walk into the hospital you had to, and still have to, walk through all the staff and patients that smoke outside the back door. I used to look at them with such a disapproving look" (Nurse Two)

7.3.3 Personal Experiences of Smoking and Dealing with Stress

The final part of the discussion dealt with individual's own experiences with smoking and how they dealt with stress. The first nurse to give her account was the current smoker:

"I tried smoking at age 8 and I was a regular smoker by 12 or 13. At age 8 it was purely mischief. In the first year of high school it was more peer pressure. My sisters and their friends smoked. It made you feel more grown up. We had a five-mile bus trip to school and all the smokers sat at the back. We were cool. It was that silly. The smokers always seemed to have more money. They were going out to discos and drinking and smoking. I wanted to be part of that group. I remember too that they (sisters and their friends) encouraged me to inhale. You got a sense of superiority at school over other students; 'I'm more mature than you'. I'm struggling to quit at the moment because I'm pregnant. I crave cigarettes at certain times: upon waking up, after meals, going for coffee. I'm expecting twins so I'm doubly resolved to quit smoking since I'm responsible for two. Luckily for me I'm off alcohol as well because the pub is definitely one place where I'd definitely smoke. The whole lifestyle (of a smoker) is different" (Nurse One)

I noticed Nurse Two often nodding her head in agreement and therefore let her speak next.

"I do remember the first time I smoked. I was 12 I think and was with my two older sisters and a couple of their friends. We were at a huge wedding. They didn't really want me around but we had sort of snuck off and my sisters had to keep me with them. Anyway, we went down

to the corner shop and one of the girls bought a package of cigarettes and I remember thinking this was so cool and I was in this group - even though they didn't want me there. When we were at the store there were some older boys there from school and they came over to talk to us. We went along to the park and sat there and smoked. I don't think the boys smoked. So I remember smoking along with the other girls and being teased by them because I wasn't inhaling. I didn't smoke again for a couple of years but do remember the first time I inhaled and how it went straight to my head. I was a regular smoker at 15 and I was really addicted. There would be times when I ran out of cigarettes and I'd sneak them from my dad or take money from his wallet to buy a pack of fags. I'd even pick butts out of the ashtray the next day. How disgusting is that? I used to smoke mainly at parties. At school kids used to smoke across the street on what we called 'Cancer Corner' but I didn't really like doing that because I didn't want the teachers to see me. I did quite well in school and didn't want the disapproval. I think I wanted to be more like the 'good girls' in school. You know - the ones who came from a nice home, had lots of money, were involved in things. They would have never smoked. I guess they had other things to enjoy in life. My parents were divorced and we didn't have a lot of money. Maybe if my mum had been around she would have discouraged me from smoking. I don't know. I just remember wanting to do things like taking dance classes or horseback riding but we just didn't have the money for it. Anyway, I quit when I was 20. They bloke I was

seeing at the time was a non-smoker and didn't like smoking so I quit for him. Even after we split I didn't go back to smoking because by that time I was into exercising and was living a pretty healthy lifestyle" (Nurse Two)

Nurse Two also mentioned the relapse she had with smoking seven years later when she left her husband (this is detailed earlier). But she also spoke of recent relapses:

"In the past year I've had short bouts of smoking that usually last a week. I'm not sure what sets it off. Sometimes it's the only thing I can control in my life. I mean...sometimes I have so many things going on with work, my personal life, my family and I start to feel overwhelmed but the smoking is something I can do to escape; it's something I can control. I always hate that I'm doing it though. Maybe I shouldn't say that. I don't always hate it - I just hate it when I smoke because of something stressful. Sometimes I'll just smoke because I can, especially if I go somewhere where I know I won't run into anyone I know. So sometimes if I'm on holiday or if I take a day out shopping in the city. It's like a treat and at those times I do enjoy it. I've also smoked when I've been out drinking" (Nurse Two)

Finally, Nurse Three gave her account of smoking:

"I've never smoked a cigarette in my whole life; I've never even had one puff. My parents smoked and it put me right off. I hated the smell of it. I can remember my mother had such difficulty breathing. We gave her a really hard time about quitting - which didn't really help at all. Thankfully she did quit about 5 years ago after 35 years of smoking" (Nurse Three)

The discussion ended with each nurse telling me how they dealt with stress in their own lives.

"Walking my dogs. Being with friends and my partner. Just trying to deal with things really. If I'm upset people know about it. I don't believe in keeping things inside" (Nurse One)

"Exercise is my main stress release and it really helped me quit smoking initially and then even when I've had relapses, they've never lasted for long because I panic and think 'Can't smoke! I won't be able to run'. So yeah, exercise is the main thing. I'm really close to my family as well and have a few really good friends. I talk to them a lot. You know you mentioned the thing about women with a partner being less likely to smoke? The only times I've ever smoked is when I've been single. I'm not sure why. Maybe I've been more content and less stressed when I'm with someone" (Nurse Two)

"I try to keep a positive attitude and not to let things bother me. I'll also take a bath to relax" (Nurse Three)

7.4 Summary of Discussions

There is clearly the perception of a high rate of smoking among nurses with all participants actually overestimating prevalence among this occupational group. Although estimates for teachers' smoking were too high, everyone was expecting that fewer teachers than nurses would smoke. However, there was some surprise from the teachers at the difference between nurses' and teachers' smoking rates (31 and 7 per cent, respectively).

Participants offered reasons why adolescent girls start smoking based on observation and, for some, their own experiences. It was clear from the discussion that smoking initiation is very much a group activity. Participants who had tried smoking had been with other females (friends and/or sisters), although one had been with her boyfriend and at age 18 was somewhat older than most first-time smokers. There was often peer pressure not only to smoke, but to make sure one inhaled the smoke. This pressure did not end in adolescence as one woman noted being persuaded by a friend to smoke when she was in her twenties.

Gaining confidence, the ability to assert oneself and feeling superior to other students were other reasons for taking up the habit as a teenager. In fact one of the teachers noted that it took a great deal of confidence *not* to take up smoking.

Although not given as a reason by smokers themselves, weight control was perceived to motivate young women to smoke. Two of the teachers noted that they had often overheard female students discussing their weight and how they did not want to quit smoking for fear of becoming overweight.

The main reasons for not taking up smoking were having: confidence, non-smoking friends, and parents who smoked. The last reason appeared to work in two ways. First, it negated the thrill or rebellion of smoking since it was an acceptable activity. Second, the smell was viewed as very unpleasant and thus put some people off smoking.

Being confident enough not to smoke was linked to doing well at school, and having the financial resources to participate in activities and/or purchase clothes. It was perceived that if a girl had these other avenues through which to gain confidence, she would not have to assert herself through smoking. In fact, one smoker and one ex-smoker spoke of a low family income while growing up and how that may have influenced their smoking behaviour. That is, smoking was something exciting or different they could afford to do, although they would have preferred having the means to be involved in some type of extra-curricular activity.

Stress was one of the main reasons given for smoking, although non-smokers were more likely to think that it was stress from the occupation itself that was key. In fact, the smokers talked about stress but made it clear that other aspects of their life were also quite stressful and it appeared that these non-work events

were just as, if not more, likely to trigger smoking and in some cases cause ex-smokers to relapse. Also made clear was that smoking is not only a habit, but a very strong addiction and one that is not recognised as such by many people, including anti-smoking groups. Ironically, although many of the women spoke of the addiction of smoking, some of the same women spoke of how they were able to control it either by having quit altogether or after having quit being able to smoke only intermittently or only in certain circumstances. Cigarettes were also viewed by some as a way of controlling one aspect of their life when everything else, e.g. work and home, was too overwhelming.

Smoking tends to occur in social settings and can in fact be triggered by being in a particular place and/or around certain people. The link between smoking and alcohol manifested itself in several ways. One participant noted experimenting with smoking a few times when she was younger and it was usually when she was drunk at a party. Another that the pub was one place where she would definitely smoke and was thankful that she was not drinking alcohol at the present time (due to pregnancy) and that it would help keep her off cigarettes. Finally, an ex-smoker experienced a relapse after a night of drinking with her sister and a group of female friends.

The social nature of smoking was mentioned earlier in initiation of the habit but it also plays a role in its maintenance as noted above. Also, participants themselves commented on the group dynamics of smoking behaviour and the camaraderie that exists among those who participate in this behaviour. In

addition to the camaraderie, participants spoke of the trust and strong ties between nurses due to the often-traumatic nature of the job.

Smokers within a workplace are perceived as a very tight knit group who have developed their own sub-culture and a unique geography of mapping out places where they can and cannot smoke. Non-smokers view their smoking colleagues with a mix of disdain and sympathy. The former dislike having being subjected to the smoke coming from the designated smoking area or having to walk through smokers outside of the workplace, and yet the phrase "I feel sorry for them" came up several times during the discussion. Much of this pity focused on how terrible it was to be addicted so badly that one would go to great lengths to have a cigarette - from using up an entire work break, walking long distances, and even standing in a bus shelter outside of the workplace.

Non-smokers were perceived as being different from smokers. Girls who did not smoke during adolescence were described as "nice", confident, and coming from "good" homes. One non-smoker stated that the smokers in her workplace were different from the non-smokers and that they were "not her cup of tea" and that she would not want to hang out with smokers. Smokers also recognise that they are different and that there is often a stigma attached to smoking. Participants spoke of quitting and one in particular spoke of hating her smoking behaviour.

7.5 Conclusion

This chapter has detailed the views and perceptions of nurses and teachers on their own smoking/non-smoking behaviour and that of their colleagues. These "post statistical analysis" discussions were the final part of a three-stage research design, with the first two stages being the focus groups and the questionnaire. The findings presented in this chapter will be incorporated into a broader discussion in the following chapter.

CHAPTER EIGHT - DISCUSSION

8.1 Introduction

This chapter, divided into two main sections, places the results of the focus groups, survey, and discussion groups within the context of existing research and knowledge. The first section focuses on the descriptive characteristics of the respondents, comparing them to other nurses and teachers, in Scotland and elsewhere. This section also reviews the current smoking status of study respondents, how and where smoking behaviour is practised, and the reasons given by study respondents for smoking, quitting, or never taking up the habit. The placement of these findings within existing research is also discussed.

The second section discusses the results of the statistical analysis, focusing on the variables significantly related to smoking behaviour. Unlike the results chapter, which was organised according to the three dependent variables of smoking, quitting and smoking before age 16, this chapter offers a discussion of all three variables together. That is, independent variables may influence smoking behaviour in more than one way and thus be linked to its initiation, maintenance, and/or cessation.

Variables that retained their significance after controlling for the confounding effects of others are highlighted and discussed in the context of other nurses and teachers, women in Scotland, and women in general. Furthermore, the results are examined within a framework of understanding the reasons and meaning behind

women's smoking and non-smoking behaviour and how the different environments in which they live their lives influence it.

8.2 Descriptive Results

8.2.1 Health Status and Behaviour

Nurses

When comparing diet and exercise of respondents to other nurses in the UK, it appears that nurses in this study may lead a less healthy lifestyle than those in other parts of Britain. Nearly 40% reported exercising three or more times per week compared to 59% of nurses in Ireland (Hope *et al.*, 1998) and 62% in London and Essex (Callaghan, 1998). The exercise regime of nurses in this study is more on par with that of other Scottish women with a recent survey revealing that 36% exercise three or more times per week (HEBS, 2000).

Comparing diet is somewhat more difficult given the various definitions ascribed to the term "healthy diet". In this study only 21% of nurses felt their diet was as healthy as it could be, with another 71% feeling that, while good, it could improve. However, about 60% of nurses in the Ireland-based study reported eating healthily, while over two-thirds of the London and Essex nurses avoided cholesterol and ensured adequate fibre intake in their diet (indicators of healthy diet used in that study). The diet of study respondents is less healthy that that of other Scottish women, with 28% eating five or more portions of these foods each day[xiii] (HEBS, 2000).

Hope *et al.* (1998) found that student nurses were significantly less likely than qualified nurses to have a healthy diet. Thus, it is possible that the less healthy eating habits found in this study are a reflection of the younger respondents. However, in the current study Chi-square analysis reveals no significant difference between age groups in how they rate their diet. Therefore, it may be the case that Scottish nurses have a less healthy diet than their counterparts in other parts of the UK and compared to other women in Scotland.

A comparison of alcohol consumption by respondents in this study and those in others is also difficult since the definitions of consumption vary widely. However, consumption levels are usually defined dichotomously as 'safe' or 'unsafe'. In this study 13% of nurses reported unsafe alcohol consumption, twice that reported by Irish nurses (Hope *et al.*, 1998) and the London and Essex nurses (Callaghan, 1998) but on par with other Scottish women age 25 to 64[xiv] (HEBS, 2000).

Teachers

There is a paucity of research on UK teachers' health behaviour. One study, based in Staffordshire (Chambers and Belcher, 1993), found that approximately 30% of teachers exercised three or more times per week (males and females were grouped and when compared there was no significant difference in weekly exercise), just under the 34% reported in this study. About 25% in each study reported not exercising at all. The proportion of women in this study exercising

three times a week is nearly on par with Scottish women in general (HEBS, 2000).

Approximately 28% of teachers report having a diet as healthy as it could be, corresponding to the same proportion of Scottish women who consume five or more servings of fruits and vegetables daily (HEBS, 2000).

More than twice the number of female teachers in this study (12%) reported consuming more than 14 units of alcohol per week compared with female teachers in the Staffordshire study but their rate of consumption is very similar to that of Scottish women age 25 to 64.

Conclusion

This examination of diet, exercise, and alcohol consumption indicates that Scottish nurses do not engage in healthy behaviours to the same extent as nurses in other parts of the UK. However, their level of alcohol consumption and exercise mirror that of other women in Scotland, lending support to the argument that how nurses act and think is often very similar to women around them (Rowe and Clark, 2000). Rowe and Clark (2000) assert that the smoking behaviour of nurses should be examined alongside that of other women. It would appear that the same could be said for examining exercise and alcohol consumption. Further examination is required on the self-ascribed poor diet of nurse respondents.

There is little information on the health behaviour of female teachers in the UK therefore it is difficult to put these results into this specific context. Clearly revealed however is that their alcohol consumption and exercise patterns reflect those of other Scottish women.

That nurses' health behaviours are more risky than other nurses in the UK may perhaps be reflective of some of the poor health behaviours of the Scottish population in general. For instance, the 1998 Scottish Health survey reveals that, among women, 32% were current smokers in Scotland compared to 29% in England, with the diet of Scottish women being generally poorer than that of their English counterparts (Shaw *et al.*, 2000). For example, English women were more likely to eat wholemeal bread, high fibre cereal and use skimmed milk, whereas Scottish women were more likely to have eaten fried food and chocolate, crisps or biscuits at least once per week. Finally, although activity levels of women in the two countries are similar, they do tend to be higher in England for women aged 55 to 74.

8.2.2 Workplace and Occupation

Smoking Policies and their Effect

Nearly 40% of all workplaces in Scotland operate under a total smoking ban (Parrott *et al.*, 2000; HEBS, 1997), a figure on par with the rest of Britain (Freeth, 1998). Parrott *et al.* (2000) note that office and public buildings are especially likely to be smoke-free with 62% of nurses and 51% of teachers in the current study reporting their workplaces as smoke-free.

Many of the sentiments expressed by both focus groups concur with the findings of Parry *et al.* (2000). That is, even some non-smokers believed that smokers have rights and should not be subjected to complete smoking restrictions in all places. However, other comments lend evidence to the stigmatisation of smokers whereby their habit is treated as a deviance that results in its own geography (Poland, 1998). One nurse did not smoke at work for fear of being preached at by colleagues, while two others sought out co-workers with whom to smoke outside their work building. One of the two also mentioned taking "smoking breaks" in her car. Non-smokers comments also contributed to the "smoking as deviant behaviour" concept by describing it as "terrible" and that it should not be allowed at all in certain places, including the workplace, restaurants, and public transportation.

Nurses and teachers in the discussion groups also revealed mixed feelings of disdain and sympathy for smokers. Disapproval stemmed from being subjected to passive smoking as some workplaces did have a designated indoor smoking area. Ironically, participants expressed sympathy for smokers having to use those areas, as they were often quite small and poorly ventilated. Furthermore, the fact that smoking is an addiction was strongly voiced by several women along with the view that anti-smoking advocates did not recognise this. Pity for those addicted to smoking and thus controlled by it was expressed by discussion group participants.

Work-related Stress

Many of the women in the current study reported suffering from work-related stress – 71% of teachers and 63% of nurses. The experience of stress by teachers has been noted elsewhere (Chambers and Belcher, 1993; Chambers, 1992) and has been the focus of several recent news stories. A UK-based counselling and advice telephone line for teachers received 1000 calls a month in its first year of operation (September 1999 to October 2000) (Nash, 2000). Stress, anxiety, and depression accounted for 27% of the calls, with another 14% related to conflict with managers. A recent survey also found that over half of England's teachers stated they would leave their profession within 10 years due to stress and heavy workloads (Carvel, 2000). Teachers in Scotland are reportedly also feeling overworked with many working more than 14 hours a week above their contract requirements (BBC News Online: UK: Scotland, 2000).

Nursing is a profession that has often been viewed as particularly stressful (Rowe and Clark, 2000). This perception is supported by evidence from this study and other UK-based research. In Ireland, Hope *et al.* (1998) found that 37% of hospital-based nurses in their study sample reported suffering from stress on a regular basis. A recent survey in England reveals that many nurses are stressed by, among other things, how to cope with under-resourced, understaffed, and unclean wards; long hours; and disenfranchisement from their workplace (Allen, 2001). A recent survey by Neurolink of National Health Service personnel found that 84% of nurses feel that the stress level in their job is increasing, with a third suffering from anxiety and depression (Birchand, 2001).

It appears that the nurses and teachers in the present study are like their colleagues across the UK in that many find their jobs demanding and subsequently have suffered stress-related symptoms and conditions. How the two groups deal with stress may differ however. Results of the focus and discussion groups of the current study reveal a sense among nurses that only they can understand the stress and trauma that their colleagues deal with. On the other hand teachers seem to manage their stress through means unconnected to work, that is, by exercising or talking things through with a partner or spouse.

8.2.3 Knowledge of the Health Consequences of Tobacco Use

Statistical analysis confirmed what the focus group results of this study suggested - that nurses are more knowledgeable than teachers about the health consequences of tobacco use. This was expected since the primary role of nurses is to provide health care and they are thus educated in this regard. Although some teachers may be responsible for educating students on the health risks of smoking, their education in this area would probably not be as clinically detailed as that received by nurses. In fact, 50% of staff interviewed in 11 secondary schools in Wessex (England) reported receiving no preparation for teaching health education during their initial training (Moon *et al.*, 1999). Furthermore, the majority of health-related items in the current study's questionnaire dealt with the effects of passive smoking, whereas the health education curriculum for teachers may focus upon health risks to smokers themselves. This may also be

true for some nurses as an Australian survey of student nurses and student teachers found that the health risks of passive smoking were not thought to be as great as the health risks from actual smoking (Adams *et al.*, 1994). This is revealed in the current study by several nurses' uncertainty about the link between passive smoking and glue ear in children and heart disease in adults. It is interesting to note however that this information has been publicised by the Health Education Board for Scotland, Action on Smoking and Health (ASH) Scotland, and the British Heart Foundation, and even if not part of nurse training curriculum, is certainly a strong message in society in general and the health care field in particular.

Most nurses also wrongly answered the questions on life years lost due to smoking and female lung cancer. However, these incorrect responses are more understandable. That is, life years lost due to smoking is not something that has been widely publicised with specificity in any education campaign. Furthermore, it is more an estimate based on examination of a variety of epidemiological studies. Additionally, the research on the difference between female and male rates of lung cancer is very recent (late 1990s) and still developing. Thus, it would not have been part of the nursing education and training for study respondents. In fact, several of the nurses (and teachers) in the focus group expressed surprise and admitted they did not realise female smokers were at greater risk than male smokers of developing the most deadly form of lung cancer.

Others have studied nurses' knowledge on the health consequences of smoking. In a survey of student nurses in London, West and Hargreaves (1995) found that whilst 80% of the smokers agreed that smoking causes premature death, 20% disagreed. Nagle *et al.* (1999) found that although the majority of nurses perceived smoking to be harmful, only half were able to correctly name five diseases caused by smoking. Research by Dore and Hoey (1988) reveals that a substantial proportion of nurses were unaware or unsure of the relationship between smoking and low birth weight, or that between smoking, oral contraceptive use and increased risk of thromboembolism (blood clots). Furthermore, 40% believed that smoking filtered cigarettes was harmless. It is likely that this number would be much lower now than 15 years ago when this study was conducted.

Although most nurses are aware that smoking and passive smoking are harmful to one's health many do not possess knowledge of specific conditions and how they are caused or exacerbated by smoking. In fact, earlier research reveals that unless cued by a multiple-choice question, nurses exhibit limited knowledge on the health risks of smoking (Faulkner and Ward, 1983). However, one might expect that knowledge in this regard had increased and opinions on the risks of tobacco use have changed somewhat over the last two decades.

The knowledge a nurse or teacher possesses in this regard may affect the care and education provided to patients and students, respectively. Specific information on the health risks of smoking, rather than general statements of its relationship to ill health, appears to be more effective at changing behaviour

(Aftab *et al.*, 1999; Liefield, 1999). Perhaps nurses and teachers need to be equipped with specific information that can be disseminated in order to prevent smoking and increase cessation.

Furthermore, whether or not a nurse believes or realises that smoking causes ill health in general, and certain conditions in particular, has been shown to affect the type and quality of care and advice given to patients. Padula's (1992) review of nurses and smoking concludes that many nurses do not possess the knowledge necessary for educating others on the effects of smoking, do not want the role of health educator, or believe they have not been taught how to help other people quit smoking. Nagle and colleagues' (1999) survey of Australian nurses reveals that only 58% of nurses thought they should educate all smoking patients on the effects of tobacco use and 63% thought that nurses were too busy to take on this task.

On the other hand, Dore and Hoey (1988) found that the majority of female nurses at a Montreal hospital felt they should try to convince others to quit smoking. Likewise, two UK based studies reveal that the majority of teachers support health promotion in schools (Moon *et al.*, 1999; Campbell and MacDonald, 1995), with teachers in the Campbell and MacDonald study indicating a desire to make it a priority, pointing specifically to issues such as smoking and drug taking. Results of the focus groups also reveal that nurses and teachers recognised the need to provide patients and students, respectively, with information on the health effects of tobacco smoke. The results of this study suggest that nurses and teachers may not be fully equipped with the information

and knowledge necessary to provide others with a detailed account of the health risks of smoking.

8.2.4 Smoking Status and Behaviour

Smoking Status of Respondents

Results of the focus groups in the current study and a review of existing literature led to the prediction that more nurses than teachers in the present study would be smokers. In fact, this study revealed that more than four times as many nurses (31%) than teachers (7%) were smokers. Approximately 47% of nurses had never smoked, compared to 70% of teachers, with about 22% of each profession describing themselves as ex-smokers.

There is definitely the perception that nurses tend to have high rates of smoking as expressed by discussion group participants. There was also the expectation that teachers would not be as likely to smoke, although some of the participants were surprised by how few teachers in the study were smokers.

There are few *recent* figures for smoking rates among either nurses or teachers in the UK, let alone Scotland. Furthermore, many of the studies that have surveyed smoking prevalence among nurses in the UK have serious methodological inconsistencies or shortcomings such as poor sampling strategy, low response rate and small sample size (Rowe and Macleod Clark, 2000b). A study from the early 1980s involving 32 nurses and 120 nursing students in the Forth Valley area of Scotland revealed smoking rates of 41% and 18%, respectively (Jones,

1985). Research by Plant *et al.* (1991) less than ten years later indicates that 39% of approximately 500 female nurses in southeast Scotland smoked. These studies, along with the current one, suggest that smoking prevalence among female Scottish nurses has decreased by 25% over the last two decades.

Relatively recent findings outside Scotland, but within the UK, reveal smoking rates of 21 to 26% among nurses in Ireland (Rowe and Macleod Clark, 1999; Hope *et al.*, 1998) and 44% in England (Callaghan, 1998). The studies by Hope *et al.* (1998) and Rowe and Macleod Clark (2000b) had good response rates (>80%) and relatively large sample sizes (n=249 and 555, respectively). The study by Callaghan (1998) however, was based on a convenience sample of nurses with a response rate of 57% (n=113). The only tentative conclusion that can be made in comparing the study sample to these studies is that rates of smoking among Scottish nurses appear to be higher than their Irish, but possibly lower than their English, counterparts.

There is even less opportunity to compare smoking prevalence for teacher respondents to other teachers in the UK. The most recent figures are those from 1991 in Staffordshire revealing that 15% of teachers were current smokers (males and females grouped but no significant difference in smoking prevalence between the two). Given that a decade separates this study from the current one, and that smoking prevalence has decreased in general during this time, comparing the two is not very telling. One interpretation is that smoking among female teachers has decreased considerably in that time period.

What may be more meaningful is to compare smoking prevalence of study respondents to other women in Scotland, with the latter determined by the 1998 Scottish Health Survey. Prevalence among females age 25 to 64 is 33.5%, similar to that of the nurses but almost five times that of the teachers (Boreham, 2000). The two occupational groups studied here are classified as belonging to social class II in which the rate of smoking is 25%. Therefore nurses have a higher rate of smoking than this group, and of the one below (28% in social class III non-manual). Teachers, on the other hand, have a much lower rate of smoking than other women in their social class, and of the class above them (11% in social class I).

The greater prevalence of nurses' smoking compared to other women in their social class contrasts recent work in the UK and the US which suggests smoking rates among nurses have decreased to the point where they are similar to or lower than the general population of women (Rowe and Macleod Clark, 2000a; 1999). However, researchers in this field have also lamented the dearth of any recent large-scale surveys of smoking prevalence amongst UK nurses (Rowe and Macleod Clark, 2000a; Strobl and Latter, 1998). The most recent data on smoking behaviour amongst Scottish nurses is from 1989/1990 and although the study included a fairly large number of female nurses (503) it was limited to one, largely urban, region in Scotland (Plant *et al.*, 1991). The rate of smoking at that time among female nurses was 39%, higher than the 33% of the general female population and similar to the present day situation.

The extremely low prevalence (7%) of teachers' smoking compared to other women in their Social Class is similar to the findings of Elkind (1988c). In her England-based study she found that the rate of smoking among student teachers (16%) was very similar to that of women categorised as professionals, such as doctors and solicitors, and half that of the student nurses also participating in the study. Possible reasons for this will be discussed in the section dealing with results of the statistical analysis.

Smoking in the Home

The majority of respondents, 87% of teachers and 78% of nurses, reported the presence of partial or total smoking bans in their homes. These proportions are somewhat higher than those reported in other recent studies and may reflect the Social Class (II) of respondents, in which lower rates of smoking occur than in the Social Classes below it. Therefore, while the proportions are positive from a public health point of view, it is questionable whether they can be applied to the entire Scottish population given that respondents are from only one Social Class. Furthermore, the studies described below were all carried out in countries other than the UK in which socio-cultural profiles differ to varying degrees.

In any case, there does appear to be a trend in other countries towards smoke-free homes. For example, an Australian study conducted in 1997 found that 53% of respondents discouraged visitors from smoking in their home (double that reported eight years prior to the current survey) and 28% of smokers reported never smoking inside their own home (compared to 20% two years prior to the

current survey) (Borland *et al.*, 1999). A survey of smokers in California revealed that 64% had some level of smoking restrictions in their homes (Gilpin *et al.*, 1999) and in Massachusetts, 25% of adolescents living with smokers reported smoking bans and 23% reported that visitors were not allowed to smoke (Biener *et al.*, 1997). Finally, a Scandinavian survey of parents (of which at least one was a smoker) of three-year olds found that 30% were not exposing their children to second-hand smoke at home (Lund *et al.*, 1998).

Figures available for Scotland include those from the 1998 Scottish Health Survey where 42% of children age 8 to 15 reported being exposed to tobacco smoke in their homes (Shaw *et al.*, 2000). However, it is not known whether this represents a ban in the other 58% of homes or if no smokers reside in or visit there or both. The second option is somewhat likely since a number of respondents noted in their questionnaire that the presence of a smoking ban in their home was a moot point since they did not smoke, nor did any of their family members or friends.

The 80% of respondents in this study reporting a smoking ban is more than double the proportion who reported the presence of such a ban in their childhood home. It has been suggested that the greater prevalence of smoke-free homes in recent years is due in part to the increased awareness of the health risks associated with second-hand smoke (Borland *et al.*, 1999; Gilpin *et al.*, 1999). It may also be a reflection of smoking becoming less socially acceptable (Poland, 1998). Borland *et al.* (1999) found that people who worked in a smoke-free environment were more likely to report smoking restrictions in the home,

suggesting that regulation in the workplace contributes to self-regulation in the home.

Smokers' Characteristics

This section focuses on the characteristics of smokers in the study, 80% of whom were nurses. Thus, the findings discussed here are, by default, mainly about nurses' smoking habits discussed in the wider context of female smoking. Any significant differences between nurses and teachers are noted.

As with other female smokers in Scotland, very few in this study smoked cigars or pipes (Boreham, 2000). The average number of cigarettes smoked per day was 15 (no significant difference between nurses and teachers), on a par with other Scottish women between the ages of 25 and 64.

Over 80% of smokers in the study started before the age of 18. This is quite typical of nurses and teachers in particular, and female smokers in general, not only in the UK, but also around the world (Hope *et al.*, 1998; Adams, 1994; Dore and Hoey, 1988; Elkind, 1988c). Adolescence in women is a developmental stage typified by curiosity, rebelliousness, and often vulnerability to peer group influences – traits conducive to trying something new, such as smoking, and typically forbidden to this group via bans on purchasing tobacco products (US Dept of Health and Human Services, 2001; Greaves and Barr, 2000).

What is striking however is the high proportion (>50%) of women in this study that started smoking at a particularly young age; that is, before the age of 16 and at a stage when one is not legally entitled to purchase tobacco products.[xv] Hope *et al.* (1998) found that 7% of Irish nurses who smoked commenced the habit before the age of 14, a much lower proportion than their counterparts in this study (13%). Among teachers who smoked age of initiation was also quite young with 9% starting before the age of 14. Early initiation of smoking among Scottish girls appears to be a trend since recent figures reveal that 13 was the age at which some girls start to smoke regularly (Boreham, 2000) with rates of smoking among Scottish female adolescents remaining relatively static over the last decade (Goddard and Higgins, 1999).

Questionnaire results established what had been suggested in the focus groups regarding the places women usually smoke. The home and pubs, clubs, and bars were the most popular places, followed by restaurants, the workplace, one's car, and outside. Given that most of the women reported a ban on workplace smoking it is not surprising that it is not the most common place in which to smoke. Even if staff are allowed to smoke, inside or outside the building, many may choose not to in order to avoid admonishment from non-smoking co-workers, especially by those who are strongly opposed to smoking in general, and at the workplace in particular (as mentioned in Chapter Five, Sections 5.2.1 and 5.3.1)

Smoking at home may be representative of how several women use the habit as a way to find peace and quiet and to create a space for themselves (Greaves, 1996). As one of the nurses noted in Chapter Seven,

"I found it was actually at home when I needed more of a break - from kids, housework and just a lot of stud happening there. Sometimes it was the only way I could sit down for 10 minutes..." (Chapter Seven).

And another nurse that:

"Sometimes it's (smoking) the only thing I can control in my life...the smoking is something I can do to escape; it's something I can control" (Chapter Seven)

If smoking is a sign of liberation (Walsh *et al.*, 1995; Soffer, 1978), yet prohibited at work, female smokers will seek out places which are permissive with one's home being the environment in which respondents would have the most (although perhaps not total) control. The home is often the place where several of a woman's roles are played out: mother, wife, partner, homemaker, to name but a few. Thus, it is clearly an environment where women may need to create a space for themselves away from the demands of others (Novo *et al.*, 2000; Greaves, 1996; Jacobson, 1986).

The popularity of smoking in pubs, bars, and clubs may be due to several reasons. First, smoking tends to go very much hand in hand with alcohol consumption as revealed by the work of Le *et al.* (2000) and Hope *et al.* (1998), and the multivariate results mentioned in the previous chapter and discussed in

more detail later in this chapter. Second, these are places where there are, usually, no restrictions on smoking. Third, many women use smoking to give them confidence in social situations (West *et al.*, 1999; Greaves, 1994; Jacobson, 1986), of which there would be various types in a pub/bar/club environment. Finally, they are places where people go to relax which is linked to why women smoke.

That is, relaxation was the most common reason given for smoking, followed by enjoying the taste, it was a sociable activity, and it aided concentration. Jacobson (1986) goes so far as to state that "women depend on cigarettes for the same reasons that they drink too much, take too many tranquillisers or overeat..." (p. 116). That is, feelings of oppression, inadequacy, anxiety, depression and lack of confidence are eased by the 'tranquillising' effect and ritual of smoking. Relaxation and stress reductions are often the reasons women, including nurses, give for smoking (Adams, 1994; O'Conner and Harrison, 1992). The women in the focus and discussion groups also mentioned smoking when the demands of their life became overwhelming and when they needed a break from the pressures of work and home.

This raises an interesting issue. The majority (80%) of the smokers in this study were nurses, and yet teachers were more likely to report suffering from work-related stress. There are several points that may be raised in response to the contradiction between stress, smoking and relaxation. First, it is not known to what extent study respondents experience stress outside of the workplace. For instance, teachers may experience more stress than nurses in the workplace, but

may be experiencing less than nurses outside of it. Little is known about study respondents' roles outside of the workplace and the subsequent demands arising from them. Indeed, Elkind (1988b) found that negative feelings played a part in smoking for both nurses and teachers in training and that the feelings were not only due to the work environment. Similarly, Hillier (1981) noted that the stress in nurses' personal lives had a stronger link with smoking than that associated with work. Smokers in the discussion groups of this study also noted how it was not only the stress of work, but also that of their home and personal life that contributed to their smoking behaviour. A second possibility is that teachers deal with stress in ways other than smoking. For instance, Chambers and Belcher (1993) found that over 40% of teachers did more exercise as a response to stress and 26% increased their outside interests (significantly more than the general practitioners to whom they were compared), while only 6% increased their smoking as a coping strategy. Third, smoking as relaxation may be more of a proactive attempt at enjoying oneself, rather than as a reactive strategy to deal with stress. Finally, it may be that teachers experience stress in a different way than nurses. Elkind's (1988b) study of nursing and teaching students found that smokers and non-smokers differed in the way they experienced stress with the former more likely to mention feeling 'very angry'. To conclude, Rowe and Clark's (2000) extensive review of research on nurses' smoking behaviour reveals that there is no clear link between stress in the workplace and smoking, and women in this study noted that it was not only work stress, but that experienced in other aspects of one's life, that contributed to smoking behaviour. Furthermore, since the majority of smokers would have taken up the habit prior

to entering the workforce, stress in the workplace may be more important when considering smoking cessation rather than its initiation or maintenance.

That smoking aids concentration has been noted in other studies - on nurses in particular and women in general (West *et al.*, 1999; West and Hargreaves, 1995). It appears to be another of the psychological functions that cigarettes have for women (Jacobson, 1986). As one of the teachers, an ex-smoker, in the discussion group noted:

> *"When I was smoking I used to mull things over with a cigarette; you sit and think and reflect"*

But aside from the ways in which cigarettes help women cope psychologically are the physiological and social functions they also serve. First, there is the link between smoking and weight control that has arisen in this and other studies. Nearly a third of respondents reported smoking in an effort to keep their weight under control with a similar proportion stating that it was one of the reasons they did not want to quit smoking. Women in the focus groups mentioned gaining weight following smoking cessation and how it was often the reason for subsequent relapse. Teachers in the discussion groups also noted how female adolescents were smoking in an attempt to stay thin. Smoking out of a fear of gaining weight is not a new issue for women in general (Greaves and Barr, 2000; West, 1999; Jacobson, 1986; Greaves, 1994) or nurses (West and Hargreaves, 1995; Adams *et al.*, 1994; O'Conner and Harrison, 1992) or teachers (Adams *et*

al., 1994). Greaves and Barr (2000) see smoking as a way for many women to aspire to the idealised image of women put forth by the media.

Second, there is the social function that smoking serves for many women. Nurses and teachers are like other women in that they smoke because their friends or colleagues do and because it is viewed as a sociable activity (West and Hargreaves, 1995; Adams *et al.*, 1994; O'Conner and Harrison, 1992; Carmichael and Cockcroft, 1990). Greaves and Barr (2000) note that young women's behaviour is very much influenced by that of family and friends and that these women often have the tendency to conform in friendship groups. Women often will smoke not because they are pressurised to but because they want to "fit in" with other people due to high levels of anxiety and insecurity about relationships (Greaves and Barr, 2000; West *et al.*, 1999). "Sharing the experience of smoking, particularly in an anti-smoking environment can solidify, mend, build or even create social relationships" (Greaves, 1996, p. 39).

The vast majority (86%) of smokers in this study had tried quitting in the past with most (88%) planning on quitting at some point. Wanting to change one's smoking behaviour is true for other Scottish women with 64% of those from the same social class as nurses and teachers intending to quit or cut down over the next six months (HEBS, 2000). The intention to quit is also prominent in other studies on nurses' smoking (West and Hargreaves, 1995; O'Conner and Harrison, 1992; Carmichael and Cockcroft, 1990).

Many of the women in this study have felt pressurised by family members (other than spouse or partner) to quit smoking, as many women often do (West *et al.*, 1999; Greaves, 1996). "They (the family) were on me all the time to quit smoking" (quote from a nurse in this study) is something women are more likely than men to perceive and respond to (West *et al.*, 1999). That only a quarter of the smokers felt similar pressure from their spouse or partner is likely due to the fact that many of them smoked as well. Women with non-smoking partners are more likely to quit smoking (McBride *et al.*, 1998) whereas women with partners who engage in unhealthy behaviours are more likely to take up and maintain such behaviours themselves (Cooper *et al.*, 1999). This may help explain why over 25% of smokers in this study report that one of the reasons they have not quit is because of other people smoking around them, a sentiment reported by nurses elsewhere (Adams *et al.*, 1994).

An interesting policy finding is that relatively few smokers feel pressurised either by government (19%) or workplace policy (40%) to quit smoking. The latter is perhaps not so surprising given that 40% thought that not all smokers complied with workplace smoking policy. In fact, 60% of nurses (who comprised the majority of smokers in the study) felt this way. One of the teachers in the discussion group commented on the smoking behaviour of her colleagues:

> *"...the staff are worse than the students. They go back to the kitchen and hang out the back door"*

Not feeling pressurised by government is somewhat more difficult to interpret and may be viewed in both a positive and a negative light. Not feeling unduly pressurised by government to quit may be a good thing and actually result in greater cessation since smokers do not respond well to public education campaigns that preach or condemn (Health Development Agency, 2000; Greaves, 1996; Jacobson, 1986). However this finding may point to the failing of health promotion and public health initiatives to account for the place of gender in smoking behaviour (US Department of Health and Human Services, 2001; Greaves and Barr, 2000).

There are several other reasons why so many women want to quit smoking and yet fail to do so. In addition to the reason mentioned above, nearly two thirds of women report generally finding it just too difficult to quit. More specific are worries about gaining weight, discussed earlier, and loss of enjoyment. Indeed, if having a cigarette is viewed as a small luxury (Greaves and Barr, 2000), it is not surprising that relinquishment is not an appealing thought. Nurses in other studies have also stated that feared loss of enjoyment is a barrier to quitting (Hope *et al.*, 1998; O'Conner and Harrison, 1992). Finally, it is interesting to note that nearly 10% of smokers felt there was no reason for them to quit. This can be interpreted in several ways. For instance, some women may not believe that smoking is harmful to their health and may in fact underestimate their personal risk, as many smokers tend to do (Mahood, 1999; Weinstein, 1999a). Another interpretation is that even though they may realise the health risks of smoking, they may not perceive any social or economic benefits to *not* smoking (Greaves, 1996). Greaves and Barr (2000) note that smoking cessation is often

related to optimism about the future, that is, the smoker wants to quit in order to improve their image and/or their health. But many women may be more concerned with day to day survival (financially, emotionally, etc.) and do not focus on long term issues such as health or external issues including how others view them.

For the smokers in this study cigarettes serve very real emotional, social, and physiological functions. This leads to important questions that must be answered if we are to see a decrease in smoking prevalence among women. First, if smoking gives women control, we need to ask why they exercise control through this habit rather than through some other outlet in their life and why they feel they have no control over their life. Second, what message are women receiving about their bodies that would cause them to seek out a deadly habit in order to maintain or lose weight? Are female smokers aware of healthy weight management practices and what actually constitutes a healthy weight for them? Finally, several women fear a loss of enjoyment if they quit smoking, which begs the question of whether there is nothing else in their life that could also provide gratification.

Ex-smokers Characteristics

Ex-smokers comprised 22% of the study sample (21% of nurses and 23% of teachers), compared to 18% of women aged 25 to 64 in Scotland, and 17% of women in social class II. Three-quarters of the ex-smokers in the study had quit out of concern for their personal health, a common reason for cessation among

nurses (West and Hargreaves, 1995; Adams *et al.*, 1994; O'Conner and Harrison, 1992; Carmichael and Cockcroft, 1990) although apparently not as common among the general population of women. West *et al.* (1999) report that only 39% of women in a UK study cited improving their health as a reason for wanting to quit. Another way in which the sample varied from that above is in the proportion of women quitting in order to save money – 52% of this sample compared to 64% in the UK study. Both of these reasons may be a reflection of the social class of the study population. That is, nurses and teachers may be more aware of the health risks of smoking than women of lower social classes. Also, because all of the study sample is employed in relatively well-paying jobs they are more likely to have a more positive outlook on the future, and thus decide to improve their health, than more disadvantaged women (Greaves and Barr, 2000). Finally, the study sample here are in a more advantaged position economically than many other women and would not be as likely to respond to increases in cigarette price (Townsend *et al.*, 1994).

Still, the fact that over half of women cite cost as a deterrent to smoking supports its importance as a factor in quitting among nurses in particular (West and Hargreaves, 1995; Adams *et al.*, 1994; O'Conner and Harrison, 1992) and women in general (Townsend *et al.*, 1994), and reflects the responsibility to the home and family that many women feel (West *et al.*, 1999). West *et al.* (1999) note that women are more likely than men to stop smoking in order to save money and to want to stop for the sake of their family and children. This is reflected in the 60% of ex-smokers in this study who reported quitting out of concern for the health of others and the 44% who quit because they felt

pressurised by their family to do so. Again, this mirrors feelings of the general population of UK women with 42% reporting that their children had tried to persuade them to quit smoking (compared to only 31% of male smokers) (West *et al.*, 1999). Being pressurised by children and other family members may give smokers a sense of support in their attempt at cessation. Indeed, in a Scotland-based study on smokers who give up on their own, Lennox and Taylor (1994) found those who succeeded thought they had high levels of social support.

It is interesting to note that while 40% of the smokers felt pressurised by their workplace smoking policy to quit, only 25% of ex-smokers cite it as an actual reason for quitting. In fact, West *et al.* (1999) report that only 10% of women cite workplace restrictions as a factor in smoking cessation. A recent Canadian study also found that nurses who quit smoking did so more often out of reasons of personal or family health than in response to societal or work-related pressures (Chalmers *et al.*, 2000). This was also the case in the current study.

Less than one-third of the sample in the current study quit smoking due to feeling pressurised by friends or receiving advice from a health professional, and less than 20% due to special smoking cessation programs. These reasons also did not figure prominently in the literature on women or nurses' smoking cessation and there are several reasons why these particular things do not usually act as triggers to quit. Not feeling pressurised by friends may be due to the fact that many of the smokers state that smoking is a sociable activity and that many people around them smoke, thus friends who smoke would be an unlikely source of encouragement to quit. Furthermore, nurses in a Canadian study stated they did

not attend smoking cessation programs due to rotating shift work that prevented regular attendance, in addition to home pressures (Bramadat *et al.*, 1996, as cited in Chalmers *et al.*, 2000).

The literature reveals that most women who quit successfully do so on their own, without the use of special programs or groups (Amos, 1996; Greaves, 1991). The findings from this study concur, with 79% of ex-smokers having quit on their own. Of the women who did quit with someone else, nearly three-quarters did so with their spouse or partner. In fact, only one of the 204 ex-smokers quit as part of a smoking cessation group.

That so few were prompted to quit due to advice from a health professional may be interpreted in several ways. First, it is unknown how many of the women actually received smoking cessation advice. Second, any advice offered may have differed from one recipient to another and may also have varied according to the provider. It is unknown whether advice came from a nurse, a general practitioner, or perhaps even a cancer specialist. Presumably, different health professionals would offer advice in different ways and vary in the clinical detail of the health consequences of smoking. Finally, this study supports others in recognising that many smokers give up without clinical intervention (Lancaster *et al.*, 2000). In fact, in a Welsh smoking intervention study many participants were sceptical of the doctor's words to influence smoking habits and noted that smokers were already well aware of the health consequences of tobacco use (Butler *et al.*, 1998).

Characteristics of Those Who Have Never Smoked

In this study the majority of teachers (70%) had never smoked compared to only 47% of nurses. In comparison 42% of Scottish women aged 25 to 64 and 58% of those in social class II had never smoked according to the Scottish Health Survey of 1999. Past research has paid little attention to these "never smokers", focusing instead on those who maintain or have ceased the habit. Although it is worrying that a substantial number of women continue to smoke, non-smoking is by far the norm among women (69% of nurses and 93% of teachers in this study are not current smokers). The opinions of non-smokers, especially those who have never smoked, could potentially aid in developing effective smoking prevention programs (US Dept of Health and Human Services, 2001).

This study reveals that the smell of cigarettes discouraged nearly two-thirds from smoking, with another 38% being put off by their taste. A Canadian focus group involving non-smoking women found that smell was a very negative aspect of smoking to them and was actually repulsive enough to restrict their mobility, such that they avoided smoky environments when possible, and the type of partner they would choose, with several women stating that they could never be in a relationship with a smoker (Health Canada, 1996). Participants in the focus and discussion groups for this study also mentioned the "unpleasant smell" of cigarettes as a reason for never smoking.

Half the women in the study declared concern for one's health was one of the reasons for never smoking, something often noted by women in the Canadian

study cited above and the focus groups of this study. Women of both studies expressed health concerns about tobacco use in two ways. One was not smoking due to some existing health problem, usually asthma, and the other was the fear of future disease from smoking.

Other reasons given included nearly one-third not liking the fact that one or both parents smoked, and approximately one-quarter citing the reasons of cost, not having friends who smoke, and parental pressure not to take up the habit. The two reasons concerning parents suggests that their own smoking status can influence the behaviour of their children in various ways. The association between smoking behaviour and parents' tobacco use is discussed further in the following section.

Cost as a deterrent to tobacco use has been noted by other women who have never smoked, with 70% of student nurses in West and Hargreaves' study (1995) stating that smoking is a waste of money. That one-quarter of the never smokers in this study revealed that not having friends who smoke kept them from picking up the habit points to the social context of this behaviour, and was confirmed by never smokers in the discussion groups. The social function of smoking was revealed in previous sections with several respondents noting that it was a sociable activity and that it was often conducted in locations or places where people gather for relaxation and enjoyment, e.g., pubs, bars, cafes. Furthermore, this study and others have found that smoking initiation among females almost always occurs in groups (Balding, 2000; Goddard and Higgins, 2000).

Half the women also mentioned that they had never considered smoking or just weren't interested. Because the survey question was close-ended it is not known exactly *why* these women had not ever considered smoking or why they were not interested. It may be related to all the other reasons cited for never taking up the habit. Another possibility is that it is related to the image non-smokers have of themselves. Other women have indicated that being a non-smoker is important to them because of the positive image it projects to themselves and others (Health Canada, 1996).

Conclusion

This section has discussed the smoking status of study respondents in relation to other women in general, and nurses and teachers where possible. It has also considered women's reasons for maintenance, cessation and total avoidance of smoking. These reasons will be taken into account in the next section, which deals with the statistical predictors of smoking, quitting, and smoking by the age of 16.

8.3 Statistical Results

8.3.1 Introduction

This section of the chapter deals with the significant influences of independent variables on smoking behaviour. There are four groups of variables, namely: individual level characteristics; household characteristics and community social capital; household characteristics and social capital whilst growing up; and workplace social capital and characteristics. The results of the multivariate

analysis are highlighted and discussed within the context of the bivariate results. That is, independent variables that are ***bold and italicised*** refer to those that maintained their significance following multivariate analysis.

8.3.2 Predictors of Smoking and Cessation: Entire Study Sample

Individual Level Characteristics

Many of the findings on individual characteristics and tobacco use reflect those in the literature. That lower odds of smoking and greater odds of quitting are associated with increasing age and being married is true for British and Scottish women in general (Shaw *et al.*, 2000; Graham and Der, 1999a) and nurses (Ohida *et al.*, 1999; Hay, 1998; Nelson *et al.*, 1994; O'Conner and Harrison, 1992) and teachers (Elkind, 1988a; 1988c) in particular. Many married individuals watch, and often attempt to control, their spouse's health behaviours with the transition from married to unmarried state often accompanied by an increase in negative health practices (Umberson, 1992). Following multivariate analysis however, neither age nor marital status retained their significance. It is difficult to compare this result with the finding of other studies on nurses' and teachers' smoking behaviour since very few employ multivariate techniques.

Presence of children in the household was related to smoking before the age of 16 only, but not with smoking or cessation. Those without children were more than twice as likely to have started before the age of 16; this held true even after controlling for the effects of other variables. This cannot be a causal variable

however since current circumstances cannot predict past behaviour. Rather, this may reflect the higher proportion of smokers among the younger, single women in the study. That is, these younger, single women are less likely to have children and also started smoking at a younger age than older smokers in the study, the latter being a trend of the past 20 years (US Department of Health and Human Services, 2001; Greaves and Barr, 2000).

The absence of a relationship between the presence of children in the household and smoking or its cessation is somewhat surprising since this study (via focus groups, questionnaire results, and discussion groups) and others revealed that among women who quit, pressure from and concern for their family is one of the primary reasons. However, it may be the case that smokers with children do not change their smoking status but simply modify their behaviour in that they do not smoke in the home (Borland, 1999). Furthermore, the presence of children in the household may actually contribute to increased smoking for some women as they use it as a means of escape or taking a break from what is happening at home (Greaves, 1996; Chapter Seven).

Greater odds of smoking were also associated with greater ***alcohol consumption*** and a poor diet, with the latter also being associated with lower odds of quitting. Only ***alcohol consumption*** retained its significance in the multivariate analysis. Other studies have also found that a greater number of smokers, compared to non-smokers, tend to engage in other negative lifestyle behaviours (Cook and Bellis, 2001; Hope *et al.*, 1998). In particular, recent work reveals that nicotine may actually induce a craving for alcohol (Le *et al.*, 2000).

Aside from a physiological cause of the link between certain health behaviours (in this case nicotine and alcohol), social influences and the mediating effect of personality may be important. Individuals live in places that vary greatly in their opportunities for practising healthy behaviours – for example, shops that offer healthy food at affordable prices and facilities for exercise (Macintyre *et al.*, 1993). Second, several risky health behaviours such as alcohol consumption, smoking, and overeating are practised in response to greater stress and/or perceived lack of social support (Umberson, 1987; 1992). Third, Cook and Bellis (2001) conclude that a broad range of inter-correlated risk behaviours such as smoking, dangerous driving, alcohol and drug use, and unsafe sex, were probably due to a combination of genetics and environment. That is, they theorise that risk-taking may be a general personality trait and that the social setting individuals experience in life would influence their behaviour. Finally, the link between weight control and smoking means that many female smokers practice unhealthy eating habits such as skipping breakfast or smoking instead of eating when they feel hungry (Greaves, 1996). The fact that greater ***alcohol consumption*** was associated with greater likelihood of smoking, even after controlling for other variables likely reflects the dual influence of the biological effects of alcohol inducing a craving for nicotine and the social effects of the contextual setting (e.g., pubs, bars, clubs) that is conducive to both alcohol consumption and tobacco use. Consuming alcohol may also cloud one's judgement and result in smoking relapse as revealed by two participants in the feedback discussions (Chapter Seven).

Lower odds of smoking were associated with ***having a health condition caused or exacerbated by smoking***, in both bivariate and multivariate analysis. This would be expected since women expressed, via the focus groups and the questionnaire, that concern for their health was one of the primary reasons for not smoking. These women either have never smoked because of an existing condition, e.g., asthma, or have quit due to having developed health complications due to tobacco use.

In the current study some questionnaire items about the consequences of smoking, particularly those suffered by non-smokers as a result of passive smoking, were related to smoking behaviour. That ***passive smoking increases the incidence of lung cancer in non-smoking adults***, and that ***babies born to mothers who smoke during pregnancy have lower than average birth weights*** are factual items that had a significant statistical relationship with smoking behaviour. However, women who knew that ***female smokers have twice the likelihood of men as developing the most deadly form of lung cancer*** were significantly *more* likely to smoke than those who did not know this fact. Also, women who knew ***how many life years were lost due to smoking*** were four times as likely to have smoked before the age of 16 than those smokers who did not know.

These results appear to be contradictory, and perhaps lend support to findings that suggest it is repetition of health warnings, rather than knowledge *per se*, that influences smoking behaviour. It may also be that smokers are more likely to pay attention to these health matters than non-smokers who would not be affected.

Knowledge that smoking may negatively affect the health of another seems to be a greater concern for smokers than possible damage to their own health. For instance, questions on the consequences of tobacco use to the smoker was not significantly associated with smoking behaviour, aside from one item of knowledge (***chances of women smokers developing the most deadly form of lung cancer***) that was actually associated with a *greater* likelihood of smoking. This supports the conclusions of Mahood (1999), Ayanian and Cleary (1999), and Weinstein (1999a) that smokers, while recognising that smoking is detrimental to health, minimise their personal health risk of tobacco use. Greater concern for health of the people around them, as opposed to self-health, may also represent women's tendencies to fall into a caregiver role. For instance, a pregnancy in the family is a more significant trigger to quit smoking for women than men, women are more likely to stop smoking for the sake of their family and children, and women are more likely than men to be pressured by their children to stop smoking (West *et al.*, 1999).

Additionally, the link between passive smoking and lung cancer, and the effect of smoking while pregnant have been known for several years and may have influenced women in the past to have either quit smoking or not start in the first place. The research on female rates of lung cancer is in a nascent stage and many of the findings would not be well known to the public, perhaps even those employed in the health care system. Finally, the link between smoking before age 16 and life years lost due to smoking is not one of cause and effect. Rather,

nurses comprised the majority of smokers in the study and they were more likely than teachers to correctly answer that question in the survey.

Household characteristics and community social capital

There were several strong significant relationships between smoking status and socio-economic indicators in the bivariate analysis. Women less likely to smoke and more likely to quit were those with advanced education, who ***lived in owner-occupied housing***, and whose household had two or more vehicles available for use. The likelihood of smoking increased with increasing level of area deprivation, with women living in the most deprived areas almost twice as likely to smoke as those living in the least deprived. Those living in more deprived areas were also much less likely to have quit. These results lend support to the existence of an "area effect" on health behaviour that has been found in past studies (Ecob and Macintyre, 2000; Reijneveld, 1998). However, of the socio-economic variables here, only ***housing tenure*** retained its significance following multivariate analysis. Household income, as measured by housing tenure, may be a good indicator of smoking behaviour for several reasons. First, greater financial resources are conducive to lower levels of stress overall in that there is less worry about meeting financial obligations. From the discussions with nurses and teachers, household stressors are one of the reasons women smoke. Second, more income enables individuals to pursue other means of coping with stress. Women noted using a cigarette break as an escape, and it may be perceived as a more affordable and/or immediate means of stress release (escape) than taking a vacation or exercising at a gym.

That area deprivation was no longer significant after controlling for other variables may be due to the somewhat homogenous nature of the study sample. That is, studies that have found an area-based effect of deprivation on health have examined either a representative sample of the overall population (Reijneveld, 1998) or individuals from a wider range of socio-economic backgrounds than those in this study (Ecob and Macintyre, 2000; Mitchell *et al.*, 2000; Macintyre *et al.*, 1993). The nature of these studies is such that the individuals and areas differed substantially. However, in this study the areas and the individuals were similar to one another. First, the range of Carstairs scores in this study was -7.72 (least deprived) to 8.33 (most deprived) with a median of -1.14, compared to a range of -7.84 to 13.17 and a median of -0.22 for Scotland in general[xvi]. This shows that although area deprivation varied from one respondent to the next, it did not vary as much as for that of the entire Scottish population and the most deprived areas were not represented in this study. Second, the individuals in this study had much in common suggesting a mediating influence of personal characteristics on the effects of an area. Shared traits of the study population included those of sex (all female), Social Class (II), ethnicity (>99% White), and to some extent, occupation (only two professions considered, i.e., nursing and teaching, both of which have been termed 'helping professions'). Perhaps area effects do not figure as prominently in a population like this compared to one that varies more in income, education, and profession. Furthermore, as noted by Macintyre *et al.* (1993), social class and area of residence cannot be treated as explanatory factors of health differences in themselves. Rather, we need a better understanding of *how* these two factors

might influence health in positive or negative ways, and how they interact with other individual, social and environmental characteristics.

Perception of social capital is one of the factors that may mediate the influence of area deprivation. This study was unique in examining *each* and *all* of the four constructs of social capital and their relationship with smoking behaviour. Most studies have tended to create an index of social capital rather than looking at its individual components or have examined single components, but not all four of them. The latter is often due to reliance on existing data, most often collected for a purpose other than that of measuring social capital. This is analogous to most deprivation indices, including Carstairs, which rely on household census variables.

Bivariate analysis reveals higher odds of quitting and lower odds of smoking with increasing levels of trust, reciprocity, and ***identity*** (with ***identity*** being the only construct to retain its significance in multivariate analysis). Lower odds of smoking before the age of 16 were also associated with increasing levels of ***identity*** in both bivariate and multivariate analysis. The lack of any association between engagement and smoking or its cessation is contrary to the findings of Lindstrøm *et al.* (2000) and also deviates from Putnam's (1993) equating social capital with the level of "civicness" in or engagement with communities. The only relationship between smoking behaviour and engagement is that those with the highest levels of engagement were significantly less likely than other smokers to have started smoking before the age of 16 (but only in bivariate analysis). The findings on engagement, and the other constructs, must be

interpreted with respect to previous studies. Social capital in this case was measured individually and is therefore not an aggregate, area-based measure such as that used by others in earlier work (Kawachi and Kennedy, 1997; Putnam, 1993). However, measuring individuals' perceptions of social capital or its constructs has been done in the context of understanding health outcomes or behaviours (Lindstrøm *et al.,* 2000; Campbell *et al.*, 1999) thus making it possible to place results of the current study into context.

Identity was the only construct to retain a significant effect in the multivariate analysis. That is, identity within one's neighbourhood and with one's neighbours was associated with greater odds of quitting and lower chances of smoking before the age of 16 after controlling for all other factors. The findings of this study are in line with those of Mitchell *et al.* (2000) on identity and health outcomes. That is, they found that women who do not feel part of their community, compared to women who do, report a higher number of health symptoms. Perhaps greater identity with one's community leads to healthy behaviour, which subsequently results in better health. However, the relationship between identity and quitting smoking is not entirely linear. That is, those in the second quartile are slightly more likely to have quit and those in the third more than three times as likely to quit than those with the lowest scores. However, those with the highest scores do not differ significantly from those with the lowest scores in their chances of quitting. In fact, among nurses (the relationship was not significant among teachers only) those with the highest scores had almost identical odds of quitting compared to those with the lowest scores. It is important to note that the non-linear effects may simply be an artefact of using

quartiles when converting the continuous scores of the social capital constructs into categorical variables.

That greater identity was not conclusively associated with healthier behaviour, and presumably better health outcomes, may be better understood through the work of Campbell *et al.* (1999). They examined social capital in two English wards - one with higher health and one with lower, and found greater levels of identity in the *latter,* and robust systems of reciprocal help and support in both. They theorise that insular, inward looking community networks may be less health enhancing than extensive, outward looking ones. It may be that identifying with one's community is beneficial to personal health but only when there is a balance of identifying oneself with a broader community - one that exists beyond some proximate geographical and residential boundary. Additionally, identification with residential community and the health enhancing or detracting of this may depend upon how one's community is actually perceived and if it is inclusive of a wide variety of people rather than identifying only with people similar to oneself.

One may question whether extremely insular communities actually produce and possess social capital. The answer is no if social capital is conceptualised as having a property of "non-excludability" (Leeder and Dominello, 1999) According to Leeder and Dominello (1999) we accumulate social trust following positive experiences with a wide range of other people, and that social capital is a type of social cohesion that "comprises trust of both non-familiar people and the institutions of governance" (p. 427). Therefore, perhaps those with the highest

identity scores within their community do not benefit from identifying with a wider range of people and thus opening themselves to a greater variety of experiences.

Another important household variable is ***the presence of smoking restrictions in the home***, lack of which was associated with greater odds of smoking and smoking before the age of 16, and lower odds of quitting, even after controlling for all other significant variables. Gilpin *et al.* (1999) found that home smoking restrictions, along with family pressure on the smoker to quit, were highly correlated with a recent quit attempt and intentions to quit in future. This study likely reflects this influence of place (the home) on behaviour and perhaps behaviour upon place. Non-smokers in a household may implement a ban, which contributes to cessation among any smokers in the home. Alternatively, ex-smokers may implement a smoking ban in their home following cessation.

Greater odds of smoking and lower odds of quitting were also associated with ***the presence of another smoker in the home***. This reflects the social nature of the activity, along with the influence of others on individual behaviour. For instance, several women, in this study and others (Adams *et al.*, 1994), mentioned not quitting due to other people smoking around them, both at home and in the workplace. Additionally, women are more likely to take up and maintain unhealthy behaviour if they have a partner who engages in such behaviour (Cooper *et al.*, 1999).

Household characteristics and community social capital whilst growing up

Since the vast majority of smokers take up the habit before age 18 it was expected that one's home environment and social relationships from that time would be important influences in this regard. However, it is important to note that a retrospective perception of one's childhood is reliant on accurate memories - something that varies considerably from person to person and over time (Koriat, 2000). In this instance, the memories of one's childhood home and neighbourhood may have faded or changed over time thus altering both objective and subjective views. This may account, in part, for the lack of significance in this study between smoking behaviour and several of the variables relating to past circumstances. The lack of significance may also reflect the complexity of smoking behaviour and the possibility this study inadvertently excluded variables which are linked to this behaviour.

The presence of other smokers in the household was particularly important, as has been shown in many other studies which reveal that female adolescents, more so than males, are very much influenced by their home life and the relationship with their parents (Flay *et al.*, 1998; Miller, 1997). ***Having a sister who smoked*** was a significant factor both in odds of smoking and quitting – increasing the likelihood of the former (in bivariate and multivariate analysis) and reducing the likelihood of the latter. On the other hand, ***having a brother who smoked*** had a significant and independent positive association with smoking before the age of 16. Sibling influence on smoking behaviour is very common, and is especially strong among women who have a sister who smokes (Balding,

2000; Elkind 1988c), perhaps because sisters constitute a woman's first peer relationship with another female. Participants in the discussion group confirmed the importance of this association with two having tried smoking for the first time in the presence of an older sister, and one also having relapsed in the company of a sister (Chapter Seven). Other studies have shown that young siblings are particularly influenced by a brother or sister who smokes (Conrad *et al.*, 1992; Swan *et al.*, 1990).

The other family relationship of significance in bivariate analysis is that between mother and daughter, with the latter being more likely to smoke if the former has done so. Father's smoking behaviour however was not significantly related to smoking or cessation among study respondents.

In bivariate, but not multivariate analysis, another significant influence from the home environment is head of household's employment status whilst growing up. If this person, likely the father in most cases, was not working then women were nearly twice as likely to smoke as those whose head of household was employed. Graham and Der (1999a) found that smoking status of women in Britain was significantly associated with father's social class. Furthermore, two studies have shown that low socio-economic status places girls at higher risk of smoking than boys (Glenndinning *et al.*, 1994; Chassin *et al.*, 1992). It thus appears that female adolescents are particularly vulnerable to the influences of family behaviour and socio-economic conditions.

Possibly linked to one's social standing are the feelings of identity and ***reciprocity*** within the community, with the latter retaining its significance in multivariate analysis. Greater levels of both were associated with a lower likelihood of smokers starting the habit before the age of 16. Greater financial resources means being able to participate in a much wider range of activities which may offer teenagers a sense of belonging and worth. Many studies have found that participating in groups and associations offers protection against smoking (Goddard and Higgins, 2000; Miller, 1997; Elkind, 1988c). If adolescent girls do not identify nor reciprocate with a group, especially peers, they use smoking to create a bond. Greaves (1996, p. 41) notes that

> *"Adolescents often use smoking for bonding across divides. Gaining a sense of belonging is made easier and some barriers and stereotypes can be broken down."*

Furthermore, growing up in a more deprived background may lead to having low aspirations for the future. Girls who do poorly in school and/or who expect that they will not succeed academically in the future are more likely to smoke (Goddard and Higgins, 2000; Graham and Der, 1999; Flay *et al.*, 1998). This is reflected by a comment made by one of the nurses, a smoker, in the discussion group:

> *"I initially got into nursing because my mum and dad said 'You've got to do something. You haven't stayed on for highers, you're not*

going to university. You must do something'. It would be better than just working in hotels, so I thought, ok, I'll go into nursing"

Workplace characteristics and social capital

In bivariate analysis women who do not believe that work smoking policies are adhered to were more likely to smoke and less likely to have quit than women who believed otherwise. It can be argued that women who smoke would be in a better position to know whether compliance occurred with such policies since they apply to them only, and not the non-smokers in the study sample.

Also in bivariate analysis women who work part-time were more likely to have quit and less likely to smoke than those working full-time. This may be an indicator of household socio-economic standing in that part-time workers were financially secure enough, probably due to a spouse/partner's income, to work part-time. As indicated earlier in the chapter, greater odds of smoking are associated with more deprived economic circumstances. However, it may also be the case that women who work part-time cannot afford to smoke and are thus less likely to have ever taken up the habit and more likely to have quit if they did smoke.

The longer one had been at her workplace, the greater were the chances of smoking. Linked to this perhaps is that greater levels of ***identity in the workplace*** setting were associated with lower chances of quitting, even after controlling for other factors. It is this finding that tends to follow on from the work of Campbell

and Wood (1998) mentioned earlier. That is, lower levels of health were found in the ward with greater levels of identity. Campbell and Wood felt that the neighbourhoods they examined were quite insular and perhaps not as conducive to good health as neighbourhoods that were more outward looking. This is further supported by Dominello and Leeder's (1999) argument, mentioned earlier, that social capital is not beneficial if it excludes non-familiar people. One's workplace community would be even more insular than that of the residential community, especially for nurses for whom the relationship between identity and smoking cessation was significant (it was not significant for teachers).

The profession of nursing is still very much dominated by women thus one's colleagues are a very homogenous group, with many nurses socialising and living together (Focus Group and Discussion Group Results, Chapters Five and Seven). Nurses also profess to be a very tight knit group, especially in the way they are able to identify with each other when no one else can:

> *"There's definitely that trust among nurses. You know, sometimes we laugh at some very tragic things that other people would not find funny"*

> *"No one else (besides other nurses) can understand the emotional trauma you go through"*

The insularity of the workplace may explain why, even after controlling for other variables, ***nurses*** are five times as likely as teachers to smoke and one-third as likely to have quit. Since the majority of smokers start before the age of 18, most of those in this study would have commenced the habit prior to nurse or teacher training. One of the clues to explain the difference in smoking rates may lie in the school qualifications obtained by respondents and the aspirations they held for the future – two things which the questionnaire did not query. As important as the question of why so many nurses smoke, is that of why rates of smoking are so incredibly low amongst teachers. That is, their rates of tobacco use are lower than that of women in their own Social Class *and* of those in the Class above.

Finally, greater ***reciprocity in the workplace*** was associated with lower odds of smoking before the age of 16. As noted earlier, current characteristics cannot predict past behaviour but past behaviour may be linked to how one perceives things currently. Given the social nature of smoking and the bonding experience it often represents, smokers may be more likely to engage with others in the workplace and offer support. Nurses in the focus and discussion groups spoke of how they were able to empathise with and support one another, thus paving the way for mutual reciprocity in the work environment.

8.3.3 Predictors of smoking and cessation: a comparison between nurses and teachers

Introduction

As noted in Chapter Six, there were some differences in which variables were significantly associated with smoking and cessation among nurses and teachers as separate groups. In some cases, certain variables that were significant for both became insignificant for one group or both groups when the separate analyses were carried out. This was particularly true when examining the odds of smoking among teachers since only 33 out of 491 were current smokers. That is, for certain variables with several response categories (e.g., age) there were few individuals falling within each category thus making statistical analysis unfeasible for drawing useful conclusions. These instances are noted in the following discussion of the differences between nurses and teachers. Furthermore, examining smoking before the age of 16 among teachers only was particularly impractical since it involved the comparison of two groups within the already small number of current smokers; this analysis was therefore not conducted.

Predictors of smoking

Greater odds of smoking for both groups were associated with the ***presence of other smokers in the home*** and lower odds with a ***current or past health conditions caused or worsened by smoking***. This is where the similarities end however, with the following discussion revealing that what predicts smoking among nurses and teachers is quite different (Table 6.22).

For nurses only, knowledge of two specific health consequences of tobacco use was significant, with opposite effects. Knowing that ***passive smoking increases***

the incidence of lung cancer in non-smoking adults was associated with lower odds of smoking and that ***female smokers have twice the likelihood of men as developing the most deadly form of lung cancer*** was associated with greater odds. As discussed earlier, the knowledge that smoking may negatively affect the health of another (lung cancer due to passive smoking) seems to be a greater concern for smokers than possible damage to their own health. Additionally, more nurses than teachers knew of the increased chances of female smokers developing lung cancer and they also comprised the majority of smokers in the study.

Nurses that ***had a sister(s) who smoked***, as opposed to those who did not, were almost three times as likely to smoke and those in ***owner-occupied housing*** were less than a third as likely to smoke as those in rented housing. These variables were not significant for the teachers, but this could possibly be due to the small number of smokers among them in addition to the small proportions that either had a sister who smoked or who lived in rented accommodation (both <6%).

Three variables were significant for teachers but not for nurses. First, teachers without ***home smoking restrictions*** were nearly three times as likely to smoke as those with restrictions. Reasons for this relationship have been discussed earlier in the chapter. That the relationship was significant in bivariate but not multivariate analysis for nurses possibly reflects that significantly fewer nurses reported smoking restrictions in the home, thus making this variable less important than others in predicting smoking behaviour.

Second, teachers who consumed less than 14 ***units of alcohol per week*** were a third as likely to smoke as those who consumed more. The link between alcohol consumption and smoking has been noted earlier. It is a link, however, that was not significant for nurses even in bivariate analysis. More nurses than teachers smoke making it more probable to have a wider range of alcohol consumption among nurse smokers. Also, smoking is an extremely addictive habit that is usually tried at a relatively young age - and in this case mainly by nurses. Thus smoking may be well engrained before initiation of alcohol consumption, rendering the latter negligible as an explanatory factor. However, because there was no significant difference between nurses and teachers regarding age of smoking initiation, it may simply be that there are predictors more powerful for some women than others.

Third, teachers with an unemployed ***spouse or live-in partner*** were more than six times as likely to smoke as those whose partner was employed. In bivariate analysis, teachers without a spouse or live-in partner were more than five times as likely to smoke. This was not an influencing factor for nurses' smoking behaviour.

Predictors of cessation

It is interesting to note, first and foremost, that *no personal characteristics were significant* for either nurses or teachers in smoking cessation (Table 6.23). This lends support to the complexity of social and environmental factors associated

with quitting smoking among women. The second thing to note is that *nurses and teachers had no common predictors* of smoking cessation.

Two social capital indicators were important for teachers. First, ***trust*** had a positive association with quitting, with those in the second quartile of scores six times as likely to have quit as those with the lowest scores. The relationship between trust and smoking cessation was not linear however. Those in the third and fourth (highest) quartiles of trust scores were nearly three times as likely to have quit than those with the lowest scores, but this relationship was not significant. It should be noted that the confidence intervals for these odds ratios were quite wide, reflecting the relatively small number of teachers who were ex-smokers. Furthermore, as noted earlier, the non-linear relationship may be due to the use of quartiles in categorising continuous variables.

Second, ***engagement*** scores were also positively associated with quitting; those with the highest scores were nearly seven times as likely to report cessation than those with the lowest scores. To Putnam (1993a) engagement is a key indicator of social capital within a community. That greater engagement is linked to a greater likelihood of smoking would thus be expected following Putnam's and other's view that more social capital results in positive outcomes. It should be kept in mind however that the confidence intervals were quite wide in this regard, and that a similar relationship did not exist among nurses. The ***presence of other smokers in the household*** was associated with much lower odds of quitting than those not living with smokers.

For nurses, ***identity*** in the workplace and in one's neighbourhood and community was significantly associated with cessation. However, the influence of this social capital construct was place-dependent. First, identity in one's wider community had a positive effect on quitting (to a point), while greater identity with one's workplace had a negative effect. In fact, nurses reporting the highest workplace identity scores had the lowest odds of quitting and were one-third as likely to quit as those with the lowest scores. The profession of nursing is still very much dominated by women resulting in a very uniform group that, according to Dominello and Leeder (1998) may not necessarily generate social capital. In fact, many nurses believe that no one else would be able to understand the feelings and emotions that arise from their work:

> *"Other nurses understand what your day has been like. Sometimes you just want to vent about work at the end of the day and it's like...well, sort of easier if there are only other nurses around and not any other people" (Chapter Five)*

However, this identity among nurses does not equate with Putnam's view of social capital whereby social networks have value and that this value arises from a *dense* network of social relations (Putnam, 2000). He acknowledges that the external effects of social capital are not always positive, such as the effects on others from the social networks manifested in gangs or the Mafia. This study suggests that perhaps the internal effects of social capital are not always positive either. The case of nurses may in fact be an example of the *bonding* dimension of social capital as opposed to the *bridging* dimension (Gittell and Vidal, 1998).

The former refers to groups that are very inward looking and that reinforce exclusive identities and homogeneity, while the latter are outward looking and encompass people across very diverse social groups.

Nurses who worked ***part-time*** were twice as likely to have quit as those working full-time, something that may be interpreted in several ways. First, part-time nurses would not have the same time and opportunity to build up workplace identity as those working full-time. However, Chi-square analysis revealed that workplace identity scores did not differ significantly between full and part-time nurses. Second, more time away from the workplace would probably mean more time spent at home and in one's neighbourhood, leading to a greater perception of identity in that environment. In fact, Chi-square analysis revealed that those working part-time were more likely to report greater identity scores in their neighbourhood. Third, working part-time may reflect greater financial resources from a spouse or live-in partner, thus negating the need to work full-time. This lends support to the association between lower likelihood of smoking with greater socio-economic standing. Finally, nurses who work part-time may not have enough money to buy cigarettes.

8.3.4 Conclusion

This section outlines the variables significantly associated with smoking behaviour following multivariate analysis. These significant variables are grouped according to the odds of smoking, odds of quitting, and odds of smoking by the age of 16, with further details given for nurses and teachers.

Odds of Smoking

Following multivariate analysis of the entire sample, the variables which retained their significance and were related to lower odds of smoking included: presence of a health condition caused or exacerbated by smoking, knowledge that passive smoking increases a non-smoker's risk of lung cancer, weekly alcohol consumption of less than 14 units, and living in owner-occupied housing. Variables significantly related to higher odds of smoking following multivariate analysis are being a nurse, knowledge that female smokers are twice as likely as male smokers to develop the most deadly form of lung cancer, other smokers being present in the household, no household smoking restrictions, and having a sister who smoked while growing up.

Among nurses only greater odds of smoking were linked to knowledge that female smokers are twice as likely as male smokers to develop the most deadly form of lung cancer, other smokers being present in the household, and having a sister who smoked while growing up. Lower odds were associated with the presence of a health condition caused or exacerbated by smoking, knowledge that passive smoking increases a non-smoker's risk of lung cancer, and living in owner-occupied, rather than rented, housing.

Following the multivariate analysis among teachers only, greater odds of smoking were associated with the presence of other smokers in the household, lack of home smoking restrictions, and having an unemployed spouse/live-in partner or not having a spouse/live-in partner at all.

Odds of Quitting

Multivariate analysis of the entire sample reveals that greater odds of quitting are associated with greater identity (third quartile only) and living in owner-occupied housing. Lower odds of quitting are associated with being a nurse, the presence of other smokers in the household, and a lack of home smoking restrictions.

Among nurses only greater odds of quitting are associated with the third quartile of identity scores and working part-time. Lower odds of quitting are associated with the highest scores for identity in the workplace.

Among teachers greater odds of quitting are associated with higher trust scores (second quartile) and higher engagement scores (top quartile), and lower odds with the presence of other smokers in the household.

Odds of Smoking by Age 16

Among the entire sample greater odds of smoking by age 16 are related to the absence of children in one's current household and having a brother who smoked while growing up. Lower odds are associated with a lack of smoking restrictions in one's current household, higher scores for past reciprocity (second quartile), higher workplace reciprocity scores (second and third quartiles), and higher identity scores (second quartile).

Among nurses greater odds of smoking by age 16 are associated with the absence of children and the presence of other smokers in one's current household. Lower odds are associated with higher workplace reciprocity scores (second quartile).

The main conclusions from this study and their implications for policy development and future research are detailed in the next and final chapter.

CHAPTER NINE - CONCLUSIONS AND IMPLICATIONS

9.1 Introduction

In this chapter I address the main aims outlined in Chapter One:

1. To gain a recent estimate of the proportion of female nurses and teachers in Scotland who smoke, and compare the smoking and cessation behaviour of these two groups.
2. To examine the influence of various individual, social and environmental variables on smoking and cessation.
3. To examine whether the four constructs of social capital have the same effect on smoking and cessation and whether how they operate depends upon the environment in which they are measured.
4. To examine whether the four constructs of social capital operate differently according to occupational group, that is, nurses and teachers.

I then outline how these findings contribute to existing research and what they mean for policy formation and future research.

A few features of the research should first be noted. First, the study was restricted to nurses and teachers and therefore its findings may not be generalised to women from all socio-economic groups and occupations. In fact, multivariate analysis revealed more differences than similarities in what predicts smoking and cessation between the two groups studied here, even though they fall within the

same social class. However, the experiences, perceptions, and behaviour of nurses mirror those of women in similar socio-economic positions and therefore their smoking should be examined in the context of their everyday lived experiences and not within the nursing environment alone (Rowe and Clarke, 2000; Adriaanse *et al.*, 1991). That said, Elkind (1988a) found that even though smoking behaviour of student nurses was similar to other women in the junior non-manual socio-economic group, the prevalence among student teachers mirrored that of women categorised as professionals, such as doctors and solicitors. Therefore, smoking behaviour of *all* women should be examined within the context of their everyday lives and the multiplicity of roles they play in a variety of settings, including home and the workplace (Graham, 1993).

Second, the focus and discussion groups were relatively small. Although they were a good source of information and provided insight into the smoking behaviour of nurses and teachers, they were not representative of all questionnaire respondents. That is, none of the groups involved a teacher who was a current smoker. However, it was anticipated that the teachers who were ex-smokers would provide some of the views and perceptions that would have been gained from a current smoker.

Third, each respondent was asked to state whether she was a current smoker, an ex-smoker, or someone who had never smoked. Given these options, the category of current smokers includes both regular and occasional smokers who may have differed across individual traits and social circumstances. However, bivariate logistic regression analysis revealed no difference in the independent

variables in this study between women who smoke 10 or more cigarettes and those who smoke less, or between those smoking 20 or more cigarettes per day and those who smoke less.

Fourth, the data are self-reported. Self-reports of smoking tend to be reliable except in situations where it is it is socially desirable to claim non-smoking status (Koslowski and Heatherton, 1990). However, questions on smoking comprise only a small part of the survey instrument, with much of the questionnaire devoted to issues regarding one's household, neighbourhood, and workplace. Furthermore, respondents were guaranteed that individual responses to the survey would be kept in strict confidence and that only aggregate results would be published.

Fifth, it became apparent that some questions were interpreted differently by respondents, a problem that did not arise during piloting of the questionnaire. For instance, Question 11 ("What do you call the neighbourhood where you live?") was meant to be an indicator of location and to act as a backup in case the respondent did not provide their postcode. Although some respondents answered with the actual name of their neighbourhood, others used adjectives to describe the area in which they lived. For example, some respondents called their neighbourhood "safe" or "clean". Furthermore, several of the questions numbered 50 to 60 refer to colleagues and co-workers. Although this was an attempt to determine views on how nurses viewed their nurse colleagues and how teachers viewed their teaching colleagues, some respondents may have interpreted this to mean *any* employee at their workplace. For instance, nurses

may have answered these questions with the view that colleagues included nurses and any other clinicians (e.g., doctors, physiotherapists) or cooking/cleaning staff. Likewise, teachers may have interpreted colleagues as other teachers, plus administrative and support staff.

Finally, although a 50 per cent response rate is higher than the 30 to 40 per cent that is typical for a mail out questionnaire (Parfitt, 1997) it still means that half of the sample are unaccounted for. Unfortunately, there is no way of knowing whether they differed significantly from respondents. An important implication may be that the estimate of current smokers among nurses and teachers found in this study may be lower than that of the actual population of Scottish nurses and teachers. This is because questionnaires about smoking habits are often not responded to by smokers (Zanetti *et al.*, 1998).

Regardless of these limitations, this study provides considerable evidence of the separate influences of social and environmental variables on smoking and its cessation.

9.2 Smoking Prevalence

This study revealed that 31% of nurses and 7% of teachers were smokers. Approximately 47% of nurses had never smoked, compared to 70% of teachers, with similar proportions of each profession describing themselves as ex-smokers. Although there appears to be a downward trend in Scottish nurses' smoking behaviour over the last 20 years, they have higher rates than other women in their Social Class, refuting recent work suggesting that nurses' smoking no longer

exceeds that of the general population (Rowe and Macleod Clark, 2000a; 1999). It may be the case that nurses' smoking prevalence is on par with or lower than that of the general population in other parts of the UK or in other parts of the world, but not in Scotland. The high proportion (31%) of nurses in this study who smoke is quite worrying for two reasons. First, it affects their own health and second, it has implications for their role as health providers and educators. It is very clear that teachers' smoking prevalence is much lower than that of the general population and those in their Social Class, but how this fits into any pattern over the last few decades is not known.

9.3 Predictors of smoking behaviour and smoking cessation

The variables having a statistically signification relationship, following multivariate analysis, with smoking and its cessation are varied and include individual, social, and environmental factors. Individual variables include presence of children in the household (greater odds of smoking before age 16), weekly alcohol consumption of 14 or more units (greater odds of smoking and lower odds of quitting), and having a health condition caused or exacerbated by smoking (lower odds of smoking).

Knowledge of only two out of 12 items on the health consequences of tobacco use were related to lower odds of smoking, with two actually being linked to negative behaviour. That is, knowledge on the lung cancer risk for female smokers was related to greater odds of being a smoker and knowledge on life

years lost due to smoking to greater odds of smoking before the age of 16. Lower odds of smoking were related to knowledge on the low birth weight for babies born to women who smoke during pregnancy and that second-hand smoke was linked to lung cancer in non-smoking adults. None of the health knowledge indicators were linked to smoking cessation.

There were also several social, economic, and environmental variables significantly associated with smoking behaviour. Women who lived in owner-occupied housing, rather than rented, were less likely to smoke and more likely to have quit. Lower odds of smoking before the age of 16 were associated with identifying more strongly with one's community and neighbourhood. Within the house, lack of smoking restrictions and the presence of another smoker (s) were associated with a greater likelihood of smoking and lower likelihood of quitting, with the former also linked to greater odds of smoking before the age of 16.

What occurred in one's household and community whilst growing up was also associated with smoking behaviour, as one would expect since the majority of smokers in this study (80%) took up the habit before the age of 18. Having a sister who smoked was associated with greater odds of smoking and lower odds of quitting, while having a brother who smoked resulted in greater odds of taking up the habit before age 16. Feelings of reciprocity within one's community and neighbourhood were linked with lower chances of smoking before age 16.

Finally, the workplace was associated with smoking maintenance and cessation with nurses more likely to smoke and less likely to quit than teachers.

Furthermore, greater feelings of identity with one's work community were associated with lower chances of quitting. However, the workplace may also simply reflect the differences between nurses' and teachers' educational and socio-economic backgrounds prior to entering their respective professions.

It is clear that smoking behaviour occurs within the context of a myriad of personal, social and environmental influences. Furthermore, it can be argued that several of the individual-level factors do not occur or have not developed in a vacuum and are shaped by social and environmental forces. For instance alcohol consumption often occurs in social settings, is used to celebrate various events, often symbolises a means of relaxation in response to difficult or tiring situations in one's life, and is a behaviour learned from that of individuals around us (e.g., family and friends). Health knowledge is also not innate and is gathered from people in the various spheres of our life including our home, school, the workplace, our health care providers and media, just to name a few.

However, establishing smoking as a social problem has met with much resistance. It is much easier to blame the individual than to try to comprehend the myriad of personal, societal and environmental variables that may influence behaviour (Greaves, 1996). But, as this study shows, smoking is a reflection of a woman's interaction with her social and economic environment. Even after controlling for the influence of past and present factors, nurses were still nearly five times as likely as teachers to smoke. This suggests that the workplace may be a very important environment in which health behaviour is influenced (although it also may reflect the educational differences between nurses and

teachers to some extent). Additionally, women in deprived socio-economic circumstances were more likely to smoke and less likely to quit smoking than those in more fortunate circumstances. Even after controlling for individual characteristics, women living in owner-occupied housing were much less likely to be current smokers and much more likely to have quit than women living in rented housing.

9.4 Theoretical contributions

9.4.1 The influence of social capital in smoking and cessation

While there is a growing body of research on the link between social capital and health outcomes, there is little on understanding the mechanism by which this occurs. This study contributes to this understanding by examining a health behaviour (smoking) that influences health outcomes and its possible association with social capital. The link between smoking and income has long been established, but the possible relationship between this habit and social capital is not well understood. This study was somewhat exploratory in nature and provides insight into *how* social capital may influence health by examining its effect on smoking behaviour, which is a key determinant of health status.

Much of the work on social capital has been on administratively defined areas - areas that may not have any meaning for the people who live there. Furthermore, past work has often derived an index of social capital from data and information

collected for some other purpose. This work is unique in its examination of social capital in both neighbourhood and workplace environments, as perceived by each respondent, thus taking into account the subjective and experiential dimension of social capital.

This study suggests that the constructs of social capital, or one's perception of them in any case, have significant and independent associations with smoking and its cessation. However, it also lends support to the theory that not all aspects of social capital result in positive health behaviours, a conclusion reached by other researchers. As Lynch *et al.* (2000) note, "....what is already clear from existing research, is that more social capital is not always good for health" (p. 404). This study goes further to suggests reasons why this may be the case and specifically shows that certain components of social capital contribute to positive health behaviour, while others appear to have less influence. Furthermore, it reveals that a construct (identity) with a positive health effect in one environment (neighbourhood) may have a negative health effect in another (workplace).

Additionally, the results of this study suggest that how the constructs of social capital operate, especially in the work environment, may be very much occupation-dependent. Discussions with nurses and teachers revealed much stronger feelings of camaraderie between nurses than the teachers and an attitude that "no one else could understand what we go through". Such an attitude exemplifies the bonding dimension of social capital and one that can often result in "getting by" in life rather than "getting ahead" (Briggs, 1998) - analogous perhaps to smoking rather than quitting or not starting in the first place.

As noted earlier, the four constructs do not necessarily result in healthy behaviour with regard to smoking. In fact, greater identity with one's work community was associated with lower odds of quitting smoking among nurses. Furthermore, the relationship between community identity and cessation is not a simple linear one. It may, in fact, be the case that there is a 'saturation point' for certain constructs. For instance, identity may be viewed as occurring along a continuum of community insularity and as the latter increases there are fewer and fewer positive effects of identity, and in fact within very insular communities (e.g. the workplace) it actually is associated with negative effects (e.g. lower likelihood of smoking cessation). These findings fail to confirm those of Cooper *et al.* (1999) who found that smoking *consistently* increased as the level of neighbourhood social capital decreased. Again, the possibility of the non-linear relationship being an artefact of the use of quartiles must be noted here.

Third, the operation of the constructs appears to be environment dependent. First, reciprocity was significantly associated with smoking behaviour in one's current *and* past community and neighbourhood, but not within the workplace setting. Second, among all women, identity had a significant relationship with smoking in, but not out of, the workplace. No other work has examined health behaviour and social capital in the workplace level, and in fact very little work has examined social capital in the workplace at all thus there has been little definitive evidence one way or the other on whether social capital exists in this environment at all (Putnam, 2000).

Finally, the constructs did not have similar effects for nurses and teachers. Engagement and trust had significant relationships with cessation for teachers only, and identity at both community and workplace levels was important among nurses only. That social capital operates quite differently between two occupational groups who were quite similar in may ways (same sex and social class for instance), appears to be "environment-dependent", and can result in positive and negative outcomes, one may conclude that it may be impossible to create generalisations about the influence of social capital.

9.4.2 The role of place in smoking and cessation

In this study certain characteristics of places were linked with smoking and cessation, resulting in a geography and sub-culture of smoking behaviour. Greater insularity of a community, especially in a workplace setting, results in identification with a very homogenous group and, as Gatrell (1997) notes, people with shared attributes (e.g. nurses) may place a different priority on exercise, leisure, and food, thus resulting in the production and reproduction of health inequalities. In this case, nurses may place identifying with a community and sharing experiences with them more beneficial to their well being than quitting smoking. For teachers, high degrees of trust and engagement with their neighbourhood community was linked to greater likelihood of having quit smoking.

The home is also an important place of influence on smoking behaviour and vice versa. That is, certain aspects of the home may dictate whether or not an

individual smokes, and one's smoking behaviour may influence whether the home is deemed an appropriate place for smoking. The presence of other smokers in the household results in a greater likelihood of smoking and a lower likelihood of quitting.

The female smokers in this study possess their own "geography" of smoking, which is influenced to some degree by the rules and restrictions on smoking behaviour that are in place in their work and home environments. As noted by Poland (1998) smokers tend to seek out appropriate and acceptable places in which to smoke and will often congregate as a group. The women in this study, both discussion participants and questionnaire respondents, reported the place where they are most likely to smoke and stipulated certain places they would not (usually the workplace) in order to avoid disapproval from others. Furthermore, certain environments, such as the workplace, tend to curb one's smoking behaviour while others, such as a pub, tend to encourage smoking. Discussions with nurses and teachers revealed that non-smokers are aware of this geography of smoking and noted the sub-culture that exists regarding this behaviour. Non-smokers perceive a certain degree of camaraderie amongst smokers and the staking out of specific places for smoking. Women tend to seek out places to smoke not only to be with other smokers, but also to create a space for themselves. Many smokers noted using this behaviour to remove themselves from the demands of a particular environment, such as the workplace or home.

9.4.3 The role of deprivation in smoking behaviour

Deprivation plays a very influential role in both smoking initiation and its maintenance. Particularly revealing are the insights provided by nurses and teachers in the discussion groups. Growing up in a household with a greater amount of disposable income enables girls to participate in activities and possess things (e.g. clothing) through which they are able to gain confidence. Girls who are relatively deprived thus seek out other means of asserting themselves and one of these other means is by smoking. It was also apparent that several of the nurses in their youth held low academic and professional expectations for themselves, and they viewed nursing as one of the few options available to them. Some nurses in the focus and discussion groups also believe that the public hold the view that nursing is a profession for girls who are not particularly intelligent. Thus, it is not only financial deprivation, but also being deprived of aspirations that may contribute to an increased likelihood of smoking. One ex-smoker in the discussion group was from a household with low family income but because of academic encouragement and support in the school setting was somewhat discouraged from smoking behaviour. This suggests that if one believes that a more prosperous future is achievable there may be less reason to smoke.

Current housing tenure, an indicator of household income, was also linked to smoking behaviour thus suggesting that deprivation plays a role not only in smoking initiation, but also in its maintenance. Furthermore, a key finding was that area deprivation, although significantly related to smoking and cessation in bivariate analysis, was not a significant predictor of either in multivariate analysis. That area deprivation was no longer significant after controlling for other variables may be due to the somewhat homogenous nature of the study

sample and that other variables are more important in such a sample for explaining smoking behaviour.

9.5 Policy Implications

Although one of the main reasons for smoking initiation is curiosity, it is likely to be maintained for social and biological reasons. First, the social reasons are varied but tend to stem, in part, from being deprived of financial resources and aspirations for the future. When this deprivation results in a lack of confidence among young girls it contributes to already existing feelings arising from the transition of child to woman and attempting to assert oneself and be accepted by one's peers. When confidence cannot be gained via the activities and goods that money provides, many girls will assert themselves by engaging in a behaviour, i.e., smoking, that provides them with a sense of maturity and superiority. Smoking also contributes indirectly to self-confidence in that it is often used as a means of weight control, whereby being slim is desirable and results in greater self-confidence. Confidence is also gained when one is accepted by peers and as revealed by the questionnaires and discussions with nurses and teachers, not having friends who smoked resulted in a lower likelihood of smoking. However, those who did smoke had done so as part of a group either willingly or after being pressurised to do so.

Once smoking initiation has begun, the biological addiction of smoking makes a strong contribution to its maintenance. In fact, the first symptoms of nicotine dependence can appear within a few days of smoking initiation, even if smoking

doesn't occur on a daily basis (DiFranza *et al.*, 2000). Additionally, the initial reasons of using smoking to deal with personal and social circumstances becomes a habit with it being "an important means through which women control and adapt to both internal and external realities" (Greaves, 1996; p. 107). As noted by several women in the focus and discussion groups, smoking is often used in order to create a space and time for oneself thus enabling the smoker to exert control in her life.

Policies to prevent smoking or aid in its cessation must therefore recognise the important roles of social, environmental and biological influences. The questionnaire and discussion groups revealed that education on the health risks of smoking may not be a particularly effective means of smoking prevention and cessation and policies that focus solely on the individual may do little to reduce smoking prevalence. Health promotion programmes must do more then than educate and advise smokers on their individual behaviour. Rather, programmes must examine why girls and women use smoking to mediate their reality and to gain a sense of control in their life. If this reality is one of social and/or financial disadvantage and deprivation, we must work to improve this reality in order to see behaviour change. In order to prevent smoking, investments must be made to improve the life chances of those most at risk of tobacco use.

Given that smoking is shaped by social forces and is, in itself, often a social activity, recognition of the role of social capital must be taken into account by health promotion programmes. That is, whether or not a woman identifies and engages with a wider community and whether this leads to trust and reciprocity

may be very beneficial in reducing smoking prevalence. If certain aspects of social capital are indeed linking to positive health behaviours we need a greater understanding of how to encourage the growth of social capital. However, it is important to recognise that certain aspects of social capital may actually result in negative outcomes. In this study, greater identity with a very close-knit and insular community (nurses) was associated with a greater likelihood of smoking. In this case a work-place based, group smoking cessation programme may be more successful than one aimed at individuals quitting smoking on their own.

Ultimately, a multidisciplinary perspective and programme is vital for significant health gains in the area of female smoking behaviour (Graham and Der, 1999b). Moreover, what is needed are programmes and policies that take a "life course" approach to smoking prevention and cessation since the factors that influence smoking behaviour among females may differ from one life stage to another. Reasons for smoking initiation may be quite different from those given for smoking maintenance. Finally, health promotion programmes should encompass the views of those women who have never smoked in order to develop successful smoking prevention strategies.

9.6 Future Work

More work is needed to determine how each of the four constructs of social capital may influence health behaviour and outcomes, and if the process is different for women of other occupations. Furthermore, this work included women only, thus little, aside from the work of Cooper *et al.* (1999) and

Lindstrøm *et al.* (2000), is known about the effects of social capital on men's health outcomes and behaviour. Because the majority of smokers take up the habit before the age of 18 it is also vital to understand female (and male) adolescents' views on how they trust, engage and identify with their community and peer groups and what effect this has on smoking initiation. Given that memories fade over time, it is important to obtain these views from young women while still in their teens rather than using retrospective accounts.

Social capital should be considered and measured in terms of its four constructs, as they appear to operate independently of each other. Furthermore, this study reveals that their operation varies from one spatial level to another and across occupational groups, and that their relationship with smoking and cessation may not be a simple linear one. In the case of nurses one of the constructs (identity) operated at more than one spatial scale indicating a certain degree of overlap between two environments. More work is thus needed on whether social capital is wholly beneficial or if there is some optimal level at which it operates.

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APPENDIX ONE - GUIDE FOR INITIAL FOCUS GROUPS

1. *Introduction (5 minutes)*

- Description of focus group methodology
  - ❖ A qualitative research technique used to generate ideas

- Rules of the focus group
  - ❖ Informal
  - ❖ Reasons for audio tape (meeting is being recorded to help me write up notes afterward)
  - ❖ Promise of anonymity (names will not be associated with comments)
  - ❖ Everyone's opinion needs to be included
  - ❖ Agree to disagree (not striving for consensus)

- Focus of the discussion
  - ❖ Smoking behaviour
  - ❖ Networks and community and the role they play in your life
  - ❖ Choice of the teaching/nursing profession

2. *First questionnaire - What do you know about smoking? (5 minutes)*

3. *Smoking (10-15 minutes)*

- ❖ Does anyone here smoke?
- ❖ Of those who don't, is anyone an ex-smoker?
- ❖ Why do you smoke?
- ❖ Why don't you smoke?
- ❖ Why did you quit smoking?
- ❖ Do you remember the first time you smoked and why?
- ❖ If you smoke, are there certain places where you don't? And certain places where you do?
- ❖ As a teacher/nurse do you feel you should be a positive role model when it comes to health behaviour, especially smoking?

4. *Networks and Community (15 minutes)*

- ❖ Do you socialise with other teachers/nurses? Do you socialise mainly with other teachers/nurses?
- ❖ Do you think of yourself and your colleagues as a cohesive group?
- ❖ Would you say you offer one another personal and/or professional support?
- ❖ Do you trust your colleagues to offer advice or support on work related matters?
- ❖ Do you volunteer or participate in any activities or organisations outside of work?
- ❖ Do you read the newspaper regularly? Do you read a local paper regularly? Do you read a national paper regularly?
- ❖ Did you vote in the recent local council elections? The most recent national elections?

4. *Occupation (10 minutes)*

Why did you choose to become a teacher/nurse?

5. *Questionnaire – Mini questionnaire (5 minutes)*

APPENDIX TWO - QUESTIONNAIRE ABOUT THE HEALTH CONSEQUENCES OF SMOKING

WHAT DO YOU KNOW ABOUT SMOKING?

1. ***"Passive smoking (second-hand smoke) increases a non-smoking adult's risk of certain medical conditions."***

For which conditions is this statement true (Please check one box for each)?

	True	False	Don't Know
Lung cancer			
Bronchitis			
Diabetes			
Heart disease			
Asthma			

2. ***"Passive smoking (second-hand smoke) increases a child's risk of certain medical conditions."***

For which conditions is this statement true (Please check one box for each)?

	True	False	Don't Know
Chest infection			
Cot death			
Diabetes			
Glue Ear			
Asthma			

(Please circle a number in response to each of the following questions.)

3. True or false: ***"In the United States, smoking kills more women than alcohol, illicit drugs, car accidents, suicide and homicide combined"***

1 True
2 False

4. It is estimated that smoking in this country costs the National Health Service close to:

1 £1 Billion per year
2 £2 Billion per year
3 £3 Billion per year

5. Those who smoke regularly and die of a smoking-related disease lose a number of years from their life expectancy compared to non-smokers. Approximately how many years do they lose?

1 5
2 10
3 15
4 >15

6. True of false: ***"Among smokers who get lung cancer, women are nearly twice as likely as men to develop the most deadly form of the disease".***

1 True
2 False

APPENDIX THREE - QUESTIONNAIRE

SECTION A: YOU AND YOUR HOUSEHOLD

1. What age are you at present?

Under 25	☐1
25 to 34	☐2
35 to 44	☐3
45 to 54	☐4
55 to 64	☐5
65 or older	☐6

2. What is your *present* marital status?

Single (never married)	☐1
Married (first marriage)	☐2
Re-married	☐3
Divorced (decree absolute)	☐4
Married, but separated	☐5
Widowed	☐6

3. To which ethnic group do you belong? (Please tick the appropriate box. If you are descended from more than one ethnic or racial group, please tick the group to which you feel you belong, or tick the 'Any other ethnic group' box and describe your ancestry in the space provided).

White-Scottish	☐1
White-English	☐2
White-Irish	☐3
White-Welsh	☐4
White-Other *(Please describe)*	☐5
Black-Caribbean	☐6
Black-African	☐7
Black-Other *(Please describe)*	☐8
Indian	☐9
Pakistani	☐10
Bangladeshi	☐11
Chinese	☐12
Any other ethnic group	☐13

4. **A household comprises either one person living alone or a group of people (not necessarily related) living at the same address with common housekeeping - that is, sharing at least one meal a day or sharing a living room or sitting room. Please indicate the relationship of each person in the household to you, as well as their age. If you live alone, leave the table blank.**

	Relationship to you	Age
Person 1		
Person 2		
Person 3		
Person 4		
Person 5		
Person 6		
Person 7		

5. **If you have a spouse or live-in partner.....**
   a. How would you describe their employment status?

Working for an employer full time (more than 30 hours per week)	☐1
Working for an employer part time (one hour or more a week)	☐2
Self-employed, employing other people	☐3
Self-employed, not employing other people	☐4
On a government employment or training scheme	☐5
Waiting to start a job he/she has already accepted	☐6
Unemployed and seeking a job	☐7
At school or in other full time education	☐8
Unable to work because of long term sickness or disability	☐9
Retired from paid work	☐10
Looking after the home or family	☐11
Other	☐12

   b. Please give their occupation, if applicable.

   _____

6. **Tick one box to show the *type* of accommodation which your household occupies.**

A whole house or bungalow that is:	
-detached	☐1
-semi-detached	☐2
-terraced (include end of terrace)	☐3
The whole of a purpose built flat or maisonette:	
-in a block of flats or tenemen	☐4
-in a commercial building (for example in an office building or hotel or over a shop)	☐5
Part of a converted or shared house, bungalow, or flat:	
-separate entrance into the building	☐6
-shared entrance into the building	☐7
A caravan or other mobile or temporary structure	☐8

7. Please tick the box which best describes *how* you and your household occupy your accommodation.

As an owner-occupier:

-buying the property through mortgage or loan	☐1
-owning the property outright (no loan)	☐2

By renting, rent free, or by lease:

-with a job, farm, shop or other business	☐3
-from a local authority (Council)	☐4
-from a New Town Development Corporation (or Commission) or from a Housing Action Trust	☐5
-from a housing association or charitable trust	☐6
-from a private landlord, furnished	☐7
-from a private landlord, unfurnished	☐8
-from a housing association or charitable trust	☐9

In some other way:

-please give details below	☐10

8. Please count the number of rooms your household has for its own use.

Do not count:	kitchens bathrooms toilets
Do count:	living rooms bedrooms all other rooms in your accommodation

The total number of rooms is: ☐

9. Please tick the appropriate box to indicate the number of cars and vans normally available for use by you or members of your household (other than visitors).

Include any car or van provided by employers if normally available for use by you or members of your household, but exclude vans used only for carrying goods.

None	☐1
One	☐2
Two	☐3
Three or more	☐4

10. For how long have you lived in Scotland?

All my life	☐1
More than 5 years	☐2
Less than 5 years	☐3
Less than 1 year	☐4

SECTION B: YOUR NEIGHBOURHOOD

11. What do you call the local neighbourhood where you live?

_____

12. For how long have you lived in your current neighbourhood?

All my life	☐1
More than 5 years	☐2
Less than 5 years	☐3
Less than 1 year	☐4

For questions 13 to 20 please indicate your level of agreement/disagreement by circling the appropriate number.

		Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree
13.	**I feel safe walking down my street after dark.**	1	2	3	4
14.	**The friendships and associations I have with other people in my neighbourhood mean a lot to me.**	1	2	3	4
15.	**My neighbourhood has a reputation for being a safe place.**	1	2	3	4
16.	**I feel at home in my neighbourhood.**	1	2	3	4
17.	**My neighbours would help in an emergency.**	1	2	3	4
18.	**There is a good sense of community in my neighbourhood.**	1	2	3	4
19.	**Most people in my neighbourhood can be trusted.**	1	2	3	4
20.	**I would be willing to work together or have worked together with others to improve my neighbourhood.**	1	2	3	4

21. What is your postcode?

☐☐☐☐☐☐☐

SECTION C: YOUR BACKGROUND

This section of the questionnaire focuses on the home and neighbourhood where you grew up. If you moved during this time, answer these questions by focusing on the home and neighbourhood *where you spent the most time during the time you were between 10 and 16 years old.*

22. Tick one box to show the type of accommodation which your family occupied.

A whole house or bungalow that is:

-detached	☐1
-semi-detached	☐2
-terraced (include end of terrace)	☐3

The whole of a purpose built flat or maisonette:

-in a block of flats or tenement	☐4
-in a commercial building (for example in an office building or hotel or over a shop)	☐5

Part of a converted or shared house, bungalow, or flat:

-separate entrance into the building	☐6
-shared entrance into the building	☐7

A caravan or other mobile or temporary structure ☐8

23. Please count the number of rooms your home had for its own use.

Do not count:	kitchens bathrooms toilets
Do count:	living rooms bedrooms all other rooms in your accommodation

The total number of rooms was: ☐

24. What was your address?

House number and street

City, town or village

County

Country

25. What was your postcode?

☐☐☐☐☐☐☐

26. How many people lived in your household?

_____

27. Please tick the appropriate box to indicate the number of cars and vans that were normally available for use by members of your household (other than visitors).

Include any car or van provided by employers if normally available for use members of your household, but exclude vans used only for carrying goods.

None	☐1
One	☐2
Two	☐3
Three or more	☐4

28. How would you describe your head of household's occupation (usually the father)?

Working for an employer full time (more than 30 hours per week)	☐1
Working for an employer part time (one hour or more a week)	☐2
Self-employed, employing other people	☐3
Self-employed, not employing other people	☐4
On a government employment or training scheme	☐5
Waiting to start a job he/she has already accepted	☐6
Unemployed and looking for a job	☐7
At school or in other full time education	☐8
Unable to work because of long term sickness or disability	☐9
Retired from paid work	☐10
Looking after the home or family	☐11
Other	☐12

29. Were one or both of your parents (or guardians) active members of one or more local organisations or clubs (e.g., sport, craft, social, political)?

Yes	☐1
No	☐2

For questions 30 to 36 please indicate your level of agreement/disagreement with by circling the appropriate number.

		Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree
30.	**I felt safe walking down my street after dark.**	1	2	3	4
31.	**My neighbourhood had a reputation for being a safe place.**	1	2	3	4
32.	**I felt at home in my neighbourhood.**	1	2	3	4
33.	**Neighbours in my old neighbourhood would help in an emergency.**	1	2	3	4
34.	**There was a good sense of community in my old neighbourhood.**	1	2	3	4
35.	**Most people in my old neighbourhood could be trusted.**	1	2	3	4
36.	**My parents (or guardians) were willing to or did work with others to improve our neighbourhood.**	1	2	3	4

SECTION E: YOUR HEALTH

37. Do you have any long-standing illness, disability or infirmity? By long-standing, I mean anything that has troubled you over a period of time or that is likely to affect you over a period of time?

Yes ☐1
No ☐2

38. Have you ever been told by a doctor that you have or have had any of the following? If yes, please tick all that apply.

Angina	☐1
Heart attack	☐2
High blood pressure	☐3
Stroke	☐4
High cholesterol	☐5
Asthma	☐6
Cancer	☐7

39. Would you say that for your height you are.....

About the right weight	☐1
Slightly over weight	☐2
Very over weight	☐3
Slightly underweight	☐4
Very underweight	☐5

40. Thinking overall about the things you eat, would you say that your diet is...

As healthy as it could be	☐1
Quite good but could improve	☐2
Not very healthy	☐3

41. On average, how many times a week do you engage in any regular exercise, such as jogging, cycling, aerobics, or brisk walking, long enough to work up sweat?

_____ times

If you drink alcohol, use the following information to answer the next question:

One pint of beer or cider	**= 2 units**	**A half pint of beer or cider**	**= 1 unit**
One glass of wine, sherry, etc.	**= 1 unit**	**One measure of spirits**	**= 1 unit**

42. In the average week approximately how many units of alcohol do you consume?

_____ units

SECTION F: YOUR OCCUPATION AND WORKPLACE

43. For how long have you been employed at this hospital? (Teachers were asked how long they had been employed at their current school, and were also asked: "For how long have you been employed as a teacher?" Response categories remained the same)

Less than 3 months	☐1
3 to 12 months	☐2
1 to 5 years	☐3
6 to 10 years	☐4
More than 10 years	☐5

44. What is your *highest* level of nursing education? (For teachers, the question read "What is your highest level of education" Response categories included: Bachelor of Education Degree, Bachelor's Degree plus Postgraduate Certificate of Education, Masters Degree, Other)

- Registered General Nurse	☐1
- Registered Mental Nurse, Registered Sick Children's Nurse, or Registered Nurse for the Mentally Handicapped Diploma	☐2
- Bachelors Degree	☐3
- Masters Degree	☐4
- Other	☐5

45. In which clinical area are you currently working? (This question omitted for teachers)

_____

46. Are you working:

Full-time (30 or more hours per week)	☐1
Part-time (less than 30 hours per week)	☐2

47. Please indicate whether you are day or night staff or on internal rotation: (This question omitted for teachers)

Day staff	☐1
Night staff	☐2
Internal rotation	☐3

48. Is smoking allowed in your workplace?

No	☐1
Yes, but only in designated areas	☐2

49. Do you think all smokers comply with the smoking policy of your workplace?

Yes	☐1
No	☐2

For questions 50 to 60 please indicate your level of agreement/disagreement by circling the appropriate number.

		Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree
50.	**I feel a stronger affinity to my colleagues than the people who live in my neighbourhood.**	1	2	3	4
51.	**I am satisfied with the control I have over my job.**	1	2	3	4
52.	**My colleagues and I form a cohesive and supportive group.**	1	2	3	4
53.	**I have suffered stress symptoms that I believed were related to work.**	1	2	3	4
54.	**Quite often I feel overworked.**	1	2	3	4
55.	**There are enough nurses in this hospital to provide satisfactory patient care.**	1	2	3	4
56.	**Some of my workmates are also some of my closest friends.**	1	2	3	4
57.	**If I needed assistance on a personal matter I would feel comfortable turning to a colleague at work.**	1	2	3	4
58.	**I would be willing to work together with my colleagues in order to improve our workplace.**	1	2	3	4
59.	**Most people I work with can be trusted.**	1	2	3	4
60.	**I trust the NHS to provide a fair working environment for nurses.**	1	2	3	4

SECTION G: LIFE OUTSIDE OF WORK

61. Approximately how often do you socialise with co-workers (outside of work)?

Every day	☐1
Once a week or more	☐2
Two to three times a month	☐3
Once a month or less	☐4
Never	☐5

62. Approximately how often do you socialise with "non-work" friends?

Every day	☐1
Once a week or more	☐2
Two to three times a month	☐3
Once a month or less	☐4
Never	☐5

63. Approximately how often do you read a national newspaper?

Every day	☐1
A few times a week	☐2
Once a week	☐3
A few times a month	☐4
Never	☐5

64. Approximately how often do you read a local newspaper?

Regularly	☐1
Occasionally	☐2
Rarely	☐3
Never	☐4

65. Approximately how often do you watch a national news program on television?

Every day	☐1
A few times a week	☐2
Once a week	☐3
A few times a month	☐4
Never	☐5

66. Approximately how often do you watch a local news program on television?

Every day	☐1
A few times a week	☐2
Once a week	☐3
A few times a month	☐4
Never	☐5

67. Did you vote in the general election of 1997?

Yes	☐1
No	☐2

68. Did you vote in the last local/council elections held in your area?

Yes ☐1
No ☐2

69. Did you vote in the Scottish Parliament elections held in May 1999?

Yes ☐1
No ☐2

Questions 70 to 73 deal with the workings of your national government - the Scottish Executive (Parliament). Please indicate your level of agreement/disagreement by circling the appropriate number.

	The Scottish Executive (Parliament).....	Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree
70.	**Pays attention to what the general public thinks when making decisions.**	1	2	3	4
71.	**Does not waste taxpayer's money.**	1	2	3	4
72.	**Has the public's best interests at heart.**	1	2	3	4
73.	**Has performed well since the May 1999 elections.**	1	2	3	4

Questions 74 to 77 deal with the workings of your local government. Please indicate your level of agreement/disagreement by circling the appropriate number.

	My local government.....	Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree
74.	**Pays attention to what the community thinks when making decisions.**	1	2	4	5
75.	**Does not waste taxpayer's money.**	1	2	4	5
76.	**Has the community's best interests at heart.**	1	2	4	5
77.	**Tells the public all it needs to know about relevant issues in the community.**	1	2	4	5

78. Are you actively involved in any of the following clubs or associations? Please tick all that apply.

Sports club ☐1
Sports supporters' club ☐2
Social club ☐3
Volunteers, e.g., St. John's Ambulance ☐4
Hobby or interest group ☐5
Church or religious groups ☐6
Political party ☐7
Neighbourhood watch scheme ☐8
Tenants' group ☐9
Residents' association ☐10
Neighbourhood council ☐11
Work-related organisation or union ☐12
Other (please specify) ☐13

SECTION H: CONSEQUENCES OF TOBACCO USE

This section focuses on some of the health and financial consequences of tobacco use. Please answer all questions, *keeping in mind that responses will be kept confidential.*

79. For which conditions is the following statement true? (Please circle one number for each)

"Passive smoking (second-hand smoke) increases a non-smoking adult's risk of certain medical conditions."

	True	False	Don't Know
Lung cancer	1	2	3
Bronchitis	1	2	3
Diabetes	1	2	3
Heart disease	1	2	3
Asthma	1	2	3

80. For which conditions is the following statement true? (Please circle one number for each)

"Passive smoking (second-hand smoke) increases a child's risk of certain medical conditions."

	True	False	Don't Know
Chest infection	1	2	3
Cot death	1	2	3
Diabetes	1	2	3
Glue Ear	1	2	3
Asthma	1	2	3

81. It is estimated that the NHS spends what amount of money on hospital treatment for disease caused by tobacco use?

£60 million per year ☐1
£100 million per year ☐2
£140 million per year ☐3

82. Those who smoke regularly and die of a smoking-related disease lose a number of years from their life expectancy compared to non-smokers. About how many years, on average, do they lose?

5 ☐1
10 ☐2
15 ☐3
>15 ☐4

83. Among smokes who get lung cancer, how likely are women to develop the most deadly form of the disease, compared to men?

Half as likely as men ☐1
Just as likely as men ☐2
Twice as likely as men ☐3

84. Babies born to mothers who smoked during pregnancy are, on average:

About 200 grams (8 ounces) *lighter* than babies born to non-smoking mothers ☐1
About the *same* weight as babies born to non-smoking mothers ☐2
About 200 grams (8 ounces) *heavier* than babies born to non-smoking mothers ☐3

SECTION I: TOBACCO USE IN YOUR HOUSEHOLD, NOW AND THEN

85. How many people in your household, including yourself, are smokers?

_____

86. What are the smoking rules or restrictions inside your house, if any?

Smoking is completely banned	☐1
Smoking is generally banned except on a few occasions	☐2
Smoking is allowed in some rooms only	☐3
There are no restrictions on smoking	☐4

87. How many people in your household smoked when you were growing up?

_____

88. Who, if anyone, in your household smoked when you were growing up?

No one smoked	☐1
Father smoked	☐2
Mother smoked	☐3
One or more brothers smoked	☐4
One or more sisters smoked	☐5
Other family member	☐6

89. What were the smoking rules or restrictions inside your house, if any, while growing up?

Smoking was completely banned	☐1
Smoking was generally banned except on a few occasions	☐2
Smoking was allowed in some rooms only	☐3
There were no restrictions on smoking	☐4

SECTION J: ONLY COMPLETE THIS SECTION IF YOU ARE A CURRENT SMOKER

90. At what age did you start smoking?

_____

91. Please tick one box to indicate whether you are:

An occasional smoker (usually less than one cigarette per day) ☐1
A regular smoker (at least one cigarette every day) ☐2

92. In a day how many of the following do you usually smoke? (Please write a number)

_____ branded cigarettes
_____ hand rolled cigarettes

93. Do you ever smoke cigars?

Occasionally (usually less than one a day) ☐1
Regularly (at least one a day) ☐2

94. Do you ever smoke a pipe?

Occasionally (usually less than once a day) ☐1
Regularly (at least once a day) ☐2

95. For how long have you been a cigarette smoker?

_____ years _____ months

96. There are several reasons why people smoke. Please rank the following, with number 1 indicating the main reason that you smoke. If some of the reasons do not apply to you, leave the boxes blank.

It is a sociable activity	☐
I enjoy the sensation	☐
I enjoy the taste	☐
It helps with weight control	☐
It helps me relax	☐
It helps with concentration	☐

97. Have you tried to quit smoking?
(Please tick *one* box only. You may need to write a number)

Never ☐1
Yes, but not in the past 2 years ☐2
Yes, ____ times in the past 2 years ☐3

98. Do you want to....

Carry on smoking ☐1
Stop smoking in the next 12 months ☐2
Stop smoking at some point in the future ☐3

99. Why have you not quit smoking? (Tick all that apply)

Have never considered quitting	☐1
Enjoy smoking	☐2
Have found it difficult to quit	☐3
Feel there is no need	☐4
Not enough support from family/friends	☐5
Not enough support at work	☐6
People smoking around me makes it difficult to quit	☐7
Am worried I would put on weight	☐8

100. Do you ever feel pressurised by any of the following to quit smoking? (Tick all that apply)

Partner or spouse	☐1
Other family members	☐2
Friends	☐3
Colleagues	☐4
Workplace policy	☐5
Government	☐6

101. Please rank the following places according to where you do the most and the least smoking. Start with number 1 to indicate the place where you smoke the most, and so on. If you do not smoke in one or more of these places, leave the box blank.

At home	
At my workplace	
On public transport	
In my car	
In pubs, clubs, or bars	
In cafes or restaurants	
Outside	
Other places	

102. If you smoke at your workplace, do you *usually* smoke:

Alone	☐1
With others	☐2

103. On a day off work do you tend to smoke:

More cigarettes	☐1
Fewer cigarettes	☐2
About the same number of cigarettes	☐3

104. How soon after you awake in the morning do you usually smoke your first cigarette?

_____ minutes *or* _____ hours

SECTION K: ONLY COMPLETE THIS SECTION IF YOU HAVE *NEVER* SMOKED

105. Why did you never start smoking? (Please tick all that apply)

Concern for my health	☐1
Pressure from parents not to start	☐2
Pressure from friends not to start	☐3
Too costly	☐4
Disliked the fact that one or both parents smoked	☐5
Didn't like the smell of cigarettes	☐6
Tried it but didn't like the taste of cigarettes	☐7
Never considered it/wasn't interested	☐8
None of my friends smoked	☐9
Other	☐10

106. How many people in your household are smokers?

_____

SECTION L: ONLY COMPLETE THIS SECTION IF YOU ARE AN <u>EX-SMOKER</u>

107. Please rank the following reasons according to how important they were in your decision to quit smoking? (Start with number 1 to indicate the most important reason and so on)

Smoking policies at work	☐
A special stop smoking scheme or group	☐
Concern for my health	☐
Concern for the health of people around me (e.g., family)	☐
Pressure from family members to quit	☐
Pressure from friends to quit	☐
Advice from a doctor or nurse	☐
Too costly to continue smoking	☐
Other	☐

108. How long ago did you quit smoking?

_____ years _____ months

109. When you quit smoking, did you quit on your own or along with someone else (e.g., spouse/partner, friend, co-worker)?

On my own	$\square_1$
With someone else (Please specify)	$\square_2$

110. How many people in your household are smokers?

_____

APPENDIX FOUR - INVITATION LETTER TO NHS PRIMARY CARE TRUSTS IN SCOTLAND

Dear ,

I am a PhD student at the University of St. Andrews. My research (supervised by Professor Paul Boyle) focuses on health behaviour, particularly smoking, and how it is influenced by the workplace, social networks and support, and various other factors. I am interested in interviewing nurses and teachers and have already conducted focus groups with each of them. My intention is to carry out a survey via a mail-out questionnaire to a sample of about 500 nurses and 500 teachers.

The General Teaching Council of Scotland are going to randomly select 1000 female primary school teachers from their list of members and post the questionnaires on my behalf with a cover letter and SAE. I will be sending a draft to the GTCS registrar in early October and they will then do the mail-out near the end of October or early November. I am hoping I can do the same with a sample of female nurses, i.e., mail-out survey questionnaires to a random sample of 1000.

Over the last couple of months I have been in contact with Anne Jarvie and Evelyn Hide from the Scottish Executive Health Department. Because I want to send the survey questionnaire to female *hospital-based* nurses only, Evelyn felt the best strategy would be to contact each Director of Nursing in the NHS Trusts in Scotland. I would appreciate any assistance you can provide. First, I would need to know approximately how many female, hospital-based nurses are employed in each NHS Trust and can then determine how many questionnaires should be posted to nurses in each. I will provide a draft questionnaire for you to examine prior to posting.

I have agreed to provide a copy of results, and give presentations if desired, to the General Teaching Council of Scotland and the Nursing Directorate of the Scottish Executive. I would be more than happy to do the same for any Trust that was interested as well.

Please do not hesitate to contact me if you require any further information. My email address is jjd@st-andrews.ac.uk and my telephone number is 01334 462819. Thank you in advance for your attention to this matter.

Sincerely,

Jacqueline Dutchak

APPENDIX FIVE - GUIDE FOR DISCUSSIONS WITH NURSES AND TEACHERS

August 2001
Discussions With Nurses

1. *Introduction (5 minutes)*

- Description of social capital
  - ❖ Something that exists within groups
  - ❖ Comprised of trust of others, identifying with them, engaging in your community, the existence of mutual reciprocity
  - ❖ In other words, a group of people (nation, country, neighbourhood, workplace) that trust one another and do things for each other, feel part of the group, etc.
  - ❖ Researchers have studied this and have linked more social capital to lower crime levels, better heath outcomes, etc.
  - ❖ Because it's been linked to better health outcomes I thought it might be one of the things that is linked to a health behaviour smoking (given the social nature of smoking)
  - ❖ About 500 questionnaires back from nurses and 500 back from teachers on who smokes, who has quit, who has never smoked, issues about the workplace, neighbourhood, etc.

- Focus of the discussion
  - ❖ Smoking behaviour and variables associated with smoking and cessation
  - ❖ Networks and community and the role they play in your life
  - ❖ Choice of the teaching profession

2. *Guess: what proportion of nurses and teachers smoked*

   Do these numbers surprise you?

3. *Smoking - What do you think is linked to smoking amongst women?*

   Why do some women smoke?

   When you think of female colleagues who smoke do you think they're different from non-smokers?

   Statistically - what is linked? When you think about their individual characteristics or life circumstances:
   e.g. income, education, occupation, family, age, marital status, etc

   Now go over what is linked to smoking and quitting for teachers/nurses

WHAT DO YOU THINK OF NURSES'/TEACHERS' SMOKING?

I thought smoking and quitting would be related to job stress and job satisfaction but it appears other things are more important?

Do you think nurses and teachers deal with stress in different ways? Or do they have different types of stress?

As a teacher, how do you deal with stress?

More than 80% of smokers take up the habit before age 18. Why do some girls start smoking? Why don't others? Can you remember trying smoking? Did your friends smoke? If a smoker, what did you think of the non-smoking crowd?

ENDNOTES

[i] Although the term can be traced back to a 1919 article by Hanifan, it was "rediscovered" in the 1960s (Putnam, 1998).
[ii] As exemplified by civic engagement; political equality; solidarity, trust, and tolerance; and social structures of co-operation.
[iii] During national elections, voters have the option of indicating a preference for a particular candidate from the party list they have chosen. Although few voters in the country exercise this option, the number varies from region to region. "The incidence of preference voting has long been acknowledged.... as a reliable indicator of personalism, factionalism, and patron-client politics" (Putnam, 1993, p. 94), thus indicating the absence of civicness.
[iv] Hillery (1968) found 99 separate definitions of "community".
[v] The program involved the provision of subsidised housing opportunities for lower-income African-American and Latino groups in an area that had previously been dominated by middle-class whites.
[vi] The authors measured the extent to which association membership deviated from the population as a whole on dimensions of education, occupation, religion and church attendance, partisanship or left-right ideology, age, gender, and racial representativeness.
[vii] The authors created seven categories of associations: political, economic, group rights, cultural, community, private interest, and social leisure.
[viii] Citing evidence that suggests poverty is linked to depletion in social capital, and is also a predictor of mortality.
[ix] The authors are currently reworking their definitions of "low" and "high" health. Initial indicators include infant mortality rate, self-reported limiting long-term illness, and mortality rate.
[x] These Carstairs values were calculated by Robin Rice of the University of Edinburgh under the direction of Donald Morse.
[xi] No scores fell within the second quartile.
[xii] No scores fell within the second quartile.
[xiii] Eating fruit and vegetables daily is used as a proxy for a generally healthy diet since consumption of these foods is strongly correlated with eating more complex carbohydrates and fish, and less sugar and high fat foods. Eating five or more servings of fruit and vegetables per day has been a key health education recommendation over the past few years.
[xiv] I did not include alcohol consumption of Scottish women age 16 to 24 or older than 64 since fewer than 5% of nurses or teachers were under the age of 25 and there almost certainly would not have been anyone in the study sample under the age of 18 or over the age of 64.
[xv] Although younger women, on average, started smoking at an earlier age than older women, the difference was not significant.
[xvi] Carstairs values were calculated from the 1991 Census by Robin Rice of the University of Edinburgh under the direction of Donald Morse.